The MODERN HOSPITAL

Vol. IV *March, 1915* No. 3

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"Baking powder when pure should consist only of cream of tartar (acid tartrate of potash, obtained as a precipitate in the fermentation of grape juice) and soda, with a little flour added, and should be free from alum, ammonia, etc. Mixed with water and dough, the soda is split by the acid tartrate, liberating carbonic-acid gas. Alum is sometimes used in baking powders with soda. Its action is less reliable."

—PRACTICAL DIETETICS, W. Gilman Thompson, M. D., Third Edition, Page 143

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THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. IV *March, 1915* No. 3

THE WINIFRED MASTERSON BURKE FOUNDATION—CONVALESCENT GROUP

Discussion of the Problem of Convalescent Homes as Adjuncts to General Hospitals—Some Experimental Architecture—Economy Necessary, but Not at the Expense of Attractiveness—A Summary of Principles

By T. J. VAN DER BENT,

OF McKIM, MEAD & WHITE, NEW YORK

THE plans which are published with this paper will not need much further explanation. It was the desire of the founder to build a convalescent home for deserving poor in a simple but dignified manner, without extravagance, but of durable construction. When completed the group of buildings will form a combination of gardens, buildings, and courts, with numerous loggias, covered passages, and many features which affect open-air treatment.

Outside occupation and work in the open air can be provided, as well as work inside the buildings, and as much variety as is practical and beneficial. Only after proper experiments and careful observations will the type of work and the best manner of recreation be selected.

At present only the administration building, the superintendent's house, the hospital, the dining hall and servants' building, the boiler and power plant, the laundry, four cottages, and the central quadrangle of passages have been completed. When the result obtained with the cottages to the west warrants, after some time, the construction of more buildings of the same type, those to the east will be erected. If experience, however, proves the value of other arrangements, the eastern cottages may differ materially from the western.

It may be found good practice to erect larger dormitory quarters, with bed rooms for six, eight, twelve, and more patients. The individual occupation of bed rooms may be found impracticable and it may be better economy to use dormitories of larger size. Only experiments will establish the most advantageous methods.

The plans of the cottages show a first and second floor dormitory, each with an ordinary capacity of ten beds per floor, and an emergency total capacity of thirty patients. The eight cottages to the west and east would contain, therefore, a total possible capacity of two hundred and forty patients, while the two larger dormitories to the north and south would contain not less than eighty each, which would bring the total capacity of the institution to four hundred patients.

If time proves that it would give greater satisfaction to extend the benefits of the institution to a larger number of patients, the plans of the four cottages to the east may be altered to such an extent as to make room for two hundred additional patients.

Only the first floor of the administration building is indicated, the upper floors being used for the staff, bed rooms and sitting rooms, quarters for the head nurses, and dormitory quarters for several of the higher grade of help. In this building a great many patients can also be housed temporarily.

The little hospital has a capacity of twelve beds. I have carefully refrained from calling the institution a hospital. The term "convalescent hospital" is a misnomer. Those who should have the greatest benefit from the institution should not be reminded of the hospital. If the admitting office connected with the institution does its work in a proper manner the little hospital should be very

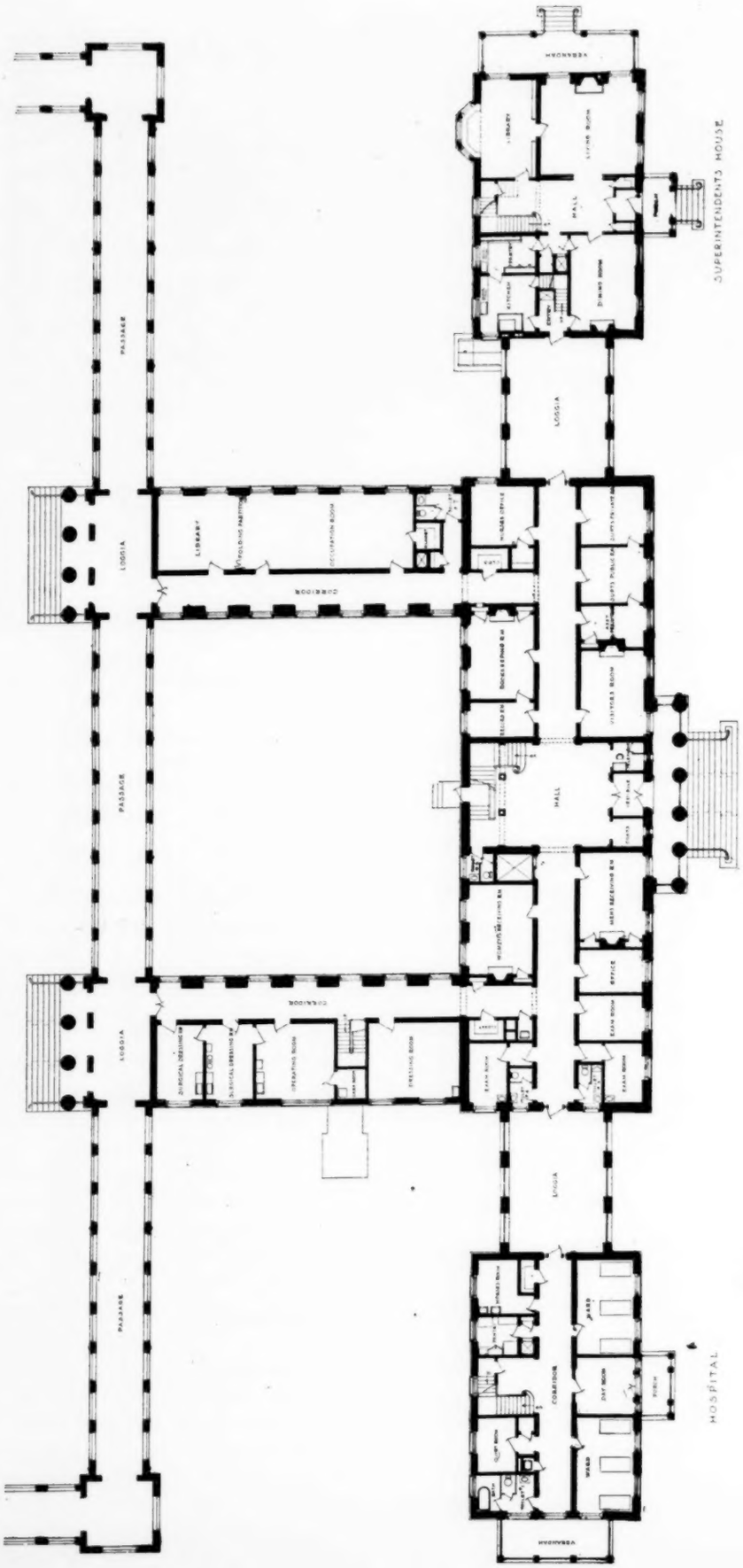


Fig. 1.

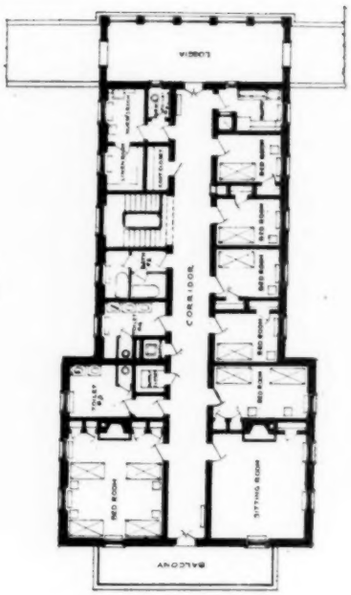


Fig. 3.

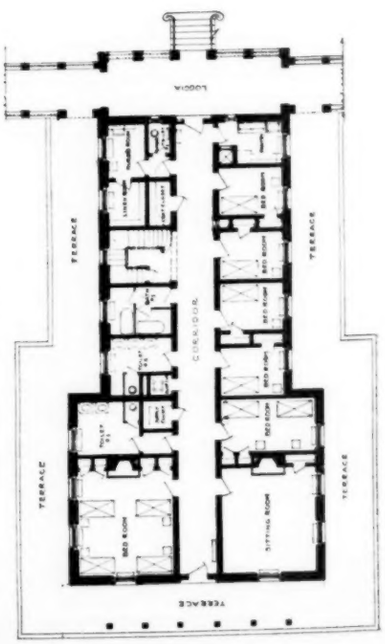


Fig. 2.

BURKE FOUNDATION—CONVALESCENT HOME

Fig. 1. Plan of administration group, with hospital and superintendent's house.

Fig. 2. Typical cottage, first floor.

Fig. 3. Typical cottage, second floor.

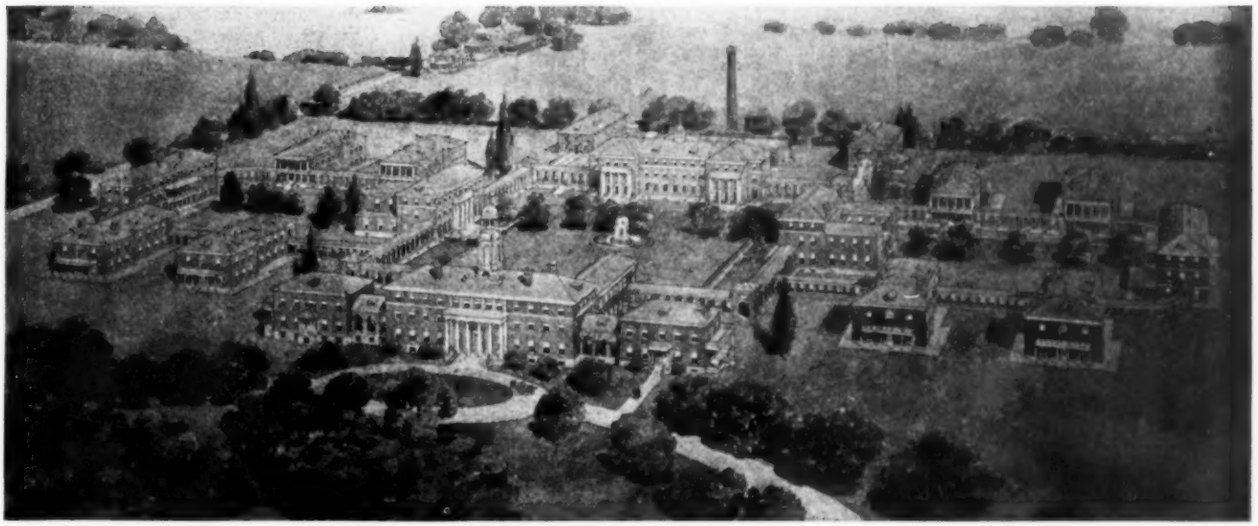


Fig. 4. Bird's-eye view of the Burke Foundation Group, Convalescent Home, at White Plains, New York.

seldom used, and after a short time may be renamed and used as a cottage for a certain class of convalescents.

The superintendent's quarters are in a separate building, a roomy, dignified house sufficiently isolated, but still affording direct connection with the administration quarters.

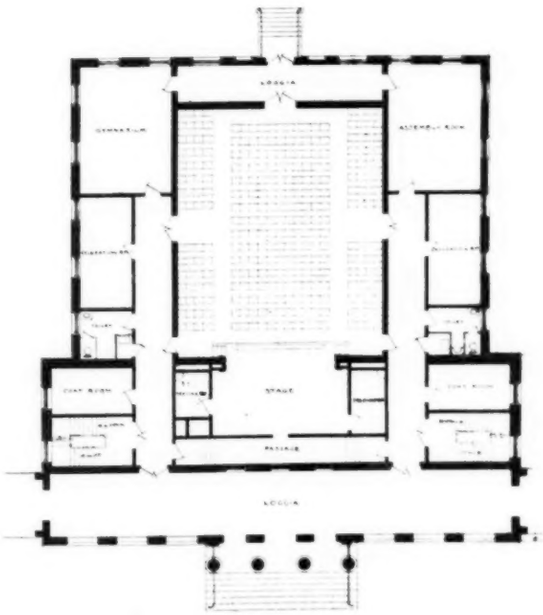


Fig. 5. Burke Foundation, Convalescent Home. Assembly building, first floor.

All cooking, except that for the superintendent and his family, is done in the dining hall building, and all meals are taken there. Separate dining rooms of various sizes are located on each side of the kitchen, which forms, as is natural, the center of the distribution of food. From this center the food reaches the service rooms on each side and from these service rooms it is brought into the various dining rooms for patients, for doctors, and for nurses, and for male and female help of different kinds. In addition to the kitchen and dining room arrangement, this roomy building contains dormitories for a great part of the female help.

The boiler house, located immediately behind the kitchen building, has a very adequate boiler plant, power plant, refrigerating plant, and an exceptionally large coal storage. This coal storage is divided into several isolated bins, so as to diminish the possible damage by fire, which is more frequent when soft coal is used, as is the case here.

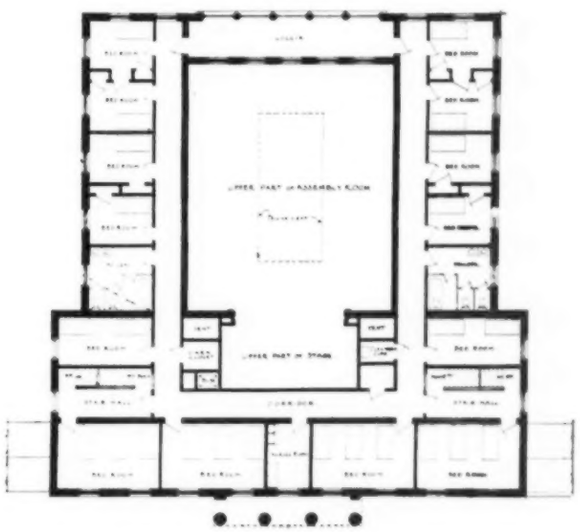


Fig. 6. Burke Foundation, Convalescent Home. Assembly building, second floor.

The laundry, as will be seen from the plans, offers a very condensed and direct means of

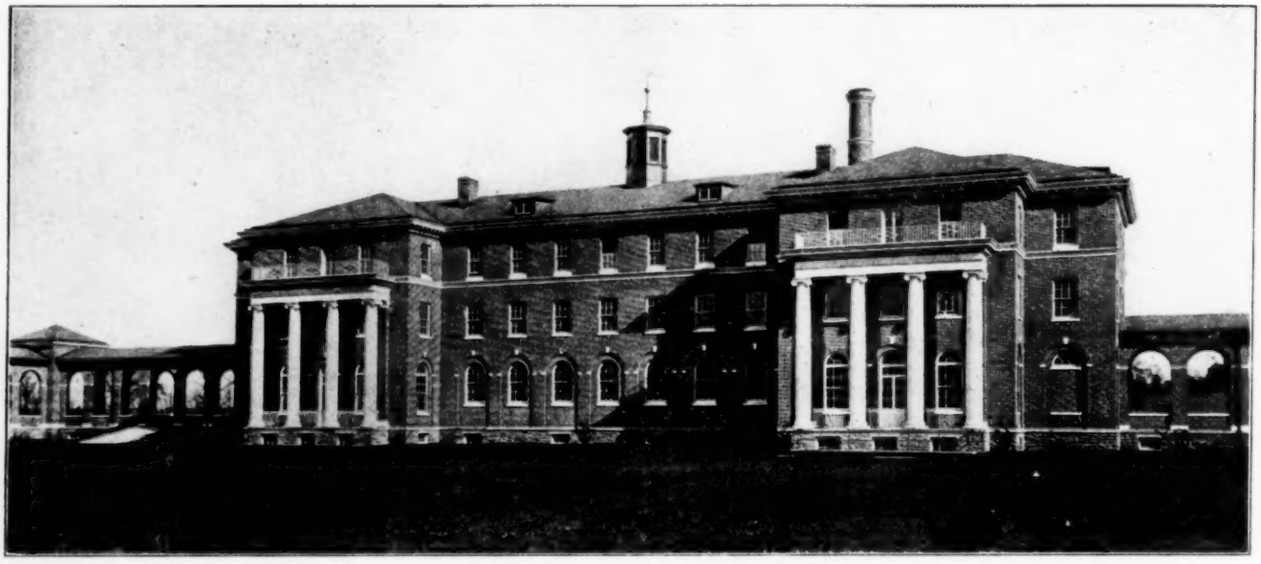


Fig. 7. Burke Foundation, Convalescent Home. Dining hall and service building.

handling soiled linen, mattresses, etc., of patients, help, doctors, and nurses. The handling goes on in a continuous manner, the goods passing through without steps being retraced.

The nurses' home, as planned, will offer living quarters and recreation rooms not only for the nurses, but also for the female patients; whereas the entertainment building, also to be constructed in the future, will contain similar rooms for the male patients, in addition to some quarters for male help, and a large auditorium. In this connection it is to be greatly regretted that this essential feature of a convalescent home—the entertainment building—could not be erected at the same time as the first group of buildings.

It will be found that the plans give complete information as to the distribution of the different parts of the institution and their functions.

In closing, I wish to make an appeal to the readers of THE MODERN HOSPITAL for the increase of the number of convalescent homes in the United States.

Institutions for convalescents are scarce, notwithstanding that their great value has been acknowledged by all doctors. The necessity for the need of these institutions is becoming more apparent every day through the steady increase of shortage in bed capacity of the regular hospitals. The increase of bed capacity does not keep pace with the rapid increase of population and stays far behind the increased demands of modern times.

The use of hospitals does increase not only with the growth of the country; not only with the progress in medicine and surgery, but also with the greater confidence of the people in the admin-

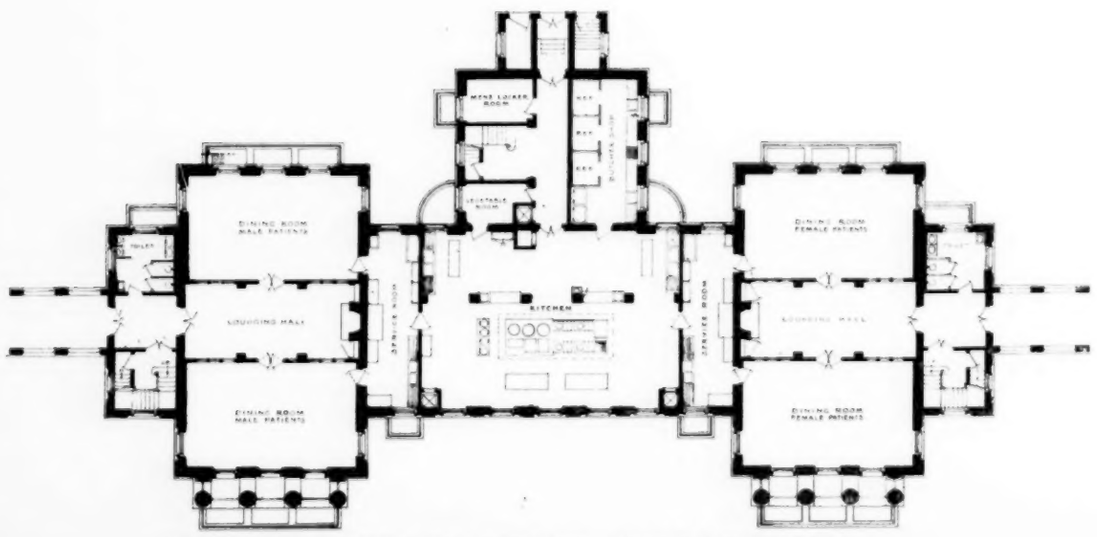


Fig. 8. Burke Foundation, Convalescent Home. Dining hall building, first floor.

Fig. 9. Burke Foundation, Convalescent Home. Superintendent's house.

istration of modern hospitals. While formerly a hospital was considered a place for the poor man, for those who could not pay for even the least expensive medical advice, and everyone was afraid of a hospital, at present it is considered the best place for the sick. And this is for many reasons: not only on account of the better nursing, and the better and more efficient treatment, and the lessened interference from outside influences, but also because the household is freed of the enormous burden which the care of the convalescent places upon it. The often depressing influence the sick may cause to the household and their interference with its management is eliminated by the hospital treatment.

The shortage of bed capacity in the regular hospitals often leads to the discharging of patients at the earliest possible time, in order to make a place for those who are in greater need of hospital treatment. This early discharge of convalescents is a necessity for the hospital and should be of benefit to the patient. The hospital atmosphere is no longer to his benefit. Other and more pleasant surroundings are needed. The patient is not fit, however, to go home and return to his regular occupation. He cannot, as yet, stand the fatigue and strain of his work. If he is sent home from the hospital the natural result is that he will attempt to take up his work, although unfit, and the consequences of this may be fatal in some cases, in other instances may cause a crippled condition for the rest of his life, and in every case will retard his complete recovery, to say the least.

The problem of finding a place for the convalescent which will put the last and final touch to his complete restoration to health is extremely difficult. The improving of the patient to normal

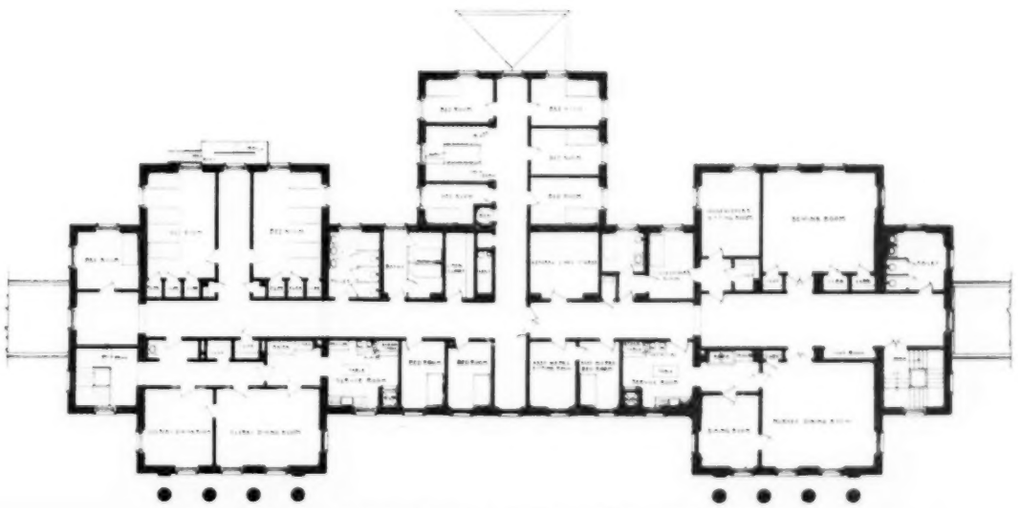


Fig. 10. Burke Foundation, Convalescent Home. Dining hall building, second floor.

condition and his return to health, is accompanied, in most cases, by a very curious symptom. It is often said "the patient is grouchy and dissatisfied with everything, a proof that he is getting well." What the real cause of this irritable condition is has not been carefully studied, but we must consider the fact in our treatment of convalescents, and it is one of the great problems in the planning of convalescent homes. This problem can be solved only by experiments along different lines.

The entire problem of convalescent homes is, as yet, in the experimental stage, and it would be a great mistake to lay down cast-iron rules as to their planning and management. The Burke Foundation is also an experiment, and as such, the finished part of the institution only a beginning, a combination of different experimental stations. With more definite knowledge as to the proper treatment and the manner of obtaining the best results, several additional buildings on the same lines, or on different principles, according to experience, will be constructed.

Without assuming too much, it may be considered as proven that the following problems constitute the special features of a home for convalescents:

1. Separation of sexes.
2. Separation (perhaps partial) of adults and children.
3. Simplicity of administration.
4. The proper amount of classification of patients. This will lead, perhaps, to the separation of white and colored races; and of patients recovering from one form of disease from those who have suffered from other ailments; and of placing together, as much as possible, certain elements which are congenial and which find benefit from each other's company.
5. Occupation of patients.
6. Recreation, including a certain amount of exercise and sport.
7. A certain amount of separation in dormitory quarters.
8. A certain amount of separation at meal times.
9. The attempt to replace such portions of home life which the patients are apt to miss most.
10. Avoidance of monotony of the regular and typical institutional life. A certain amount of variety in everyday occupation and recreation.

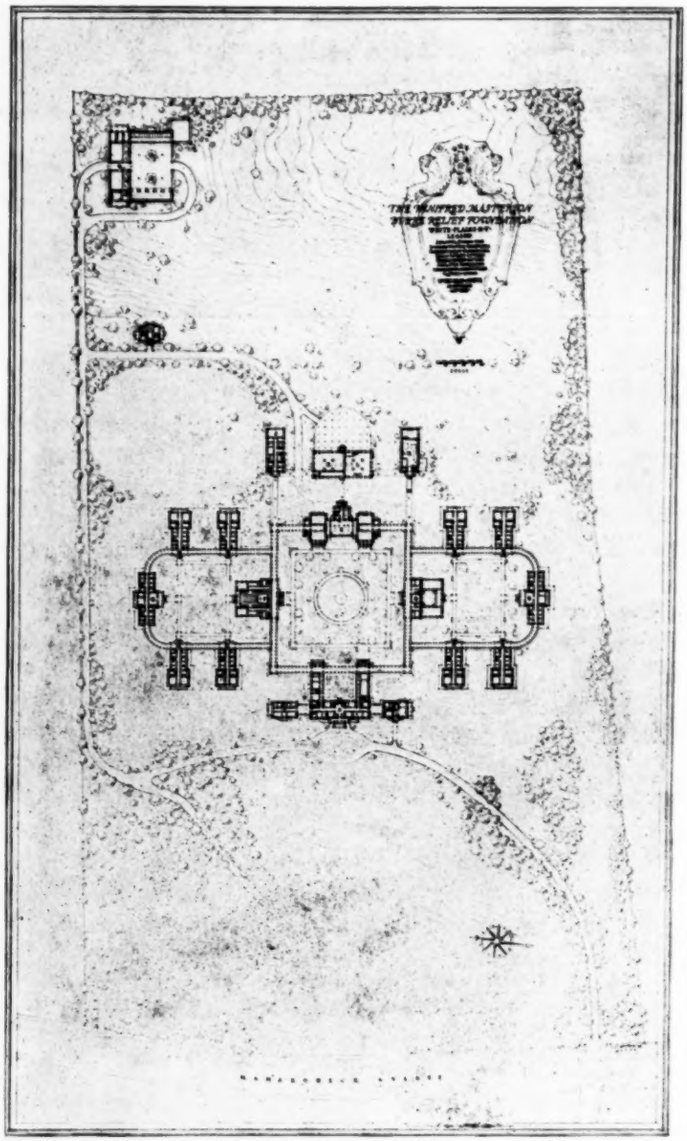


Fig. 11. Burke Foundation, Convalescent Home. Plan of the group.

Although the convalescent home is in the experimental stage, there is no question about the immediate need of such homes in connection with all general hospitals. As a relief method and a method of preventing relapse and return of patients to the hospital, they are an absolute necessity of the present time.

They should be advocated in every community as an annex to the general hospital and as a part of its system. They should be constructed as economically as possible, without, however, losing sight of the great difficulties which exist in restraining convalescents from returning home or going to work.

The strong desire of all convalescents to return to their own home and to take up their regular work must be met by the attractiveness of the convalescent home. It will take a little more than just the knowledge that it will do him good, to offset the desire of the patient to return to his usual surroundings, to his home circle or to his place of business. It may also be that the patient has a strong dislike for any kind of institutional atmos-

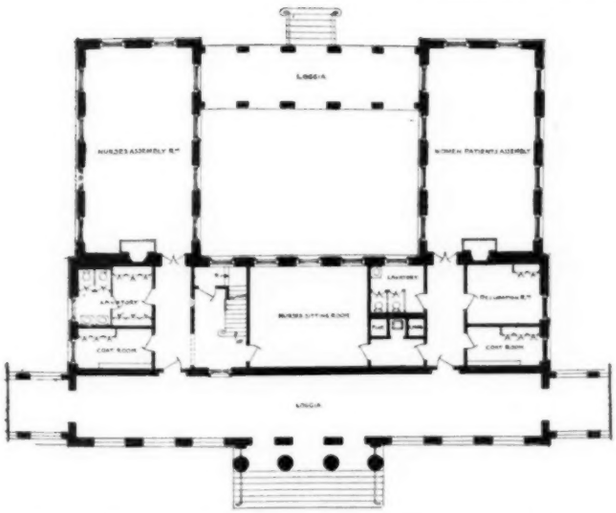


Fig. 12. Burke Foundation, Convalescent Home. Nurses' home, first floor.

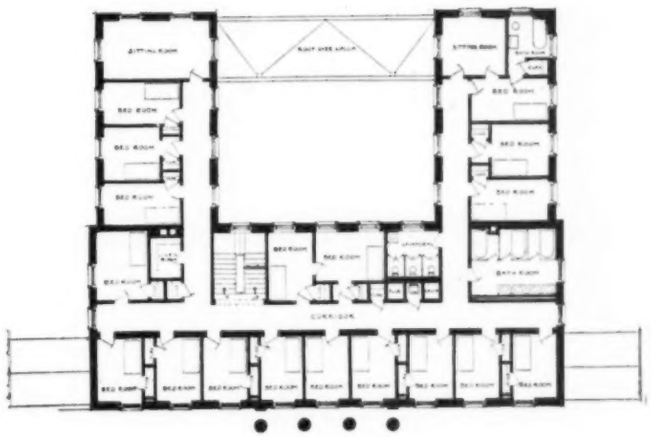


Fig. 13. Burke Foundation, Convalescent Home. Nurses' home, second floor.

phere; thus, although we should build cheaply and economically, if we do not take care of the above we may build too cheaply, and the convalescent home may be of little or no use, and those for whom the place was created will refuse to enter.

The patient should consider a stay in the convalescent home not a duty forced upon him, but a pleasant vacation, and for this reason the home must have a great amount of attractiveness. This cannot be obtained if economy leads to too cheap building, to the construction of barracks or prison-like buildings. While good economy is of the greatest benefit to the institution and will extend the scope of its beneficial work, false or mistaken economy will result in absolute failure of the work.

The reputation of the institution will insure or prevent its success. It seems that the time is ripe for a campaign for the erection of convalescent homes wherever needed, a campaign for the relief of the general hospital and its necessarily more expensive treatment; for the obtaining of better results than records of returning patients and relapsing convalescents will show at present.

Notwithstanding the above remarks, the convalescent home can be constructed so much more cheaply than the regular hospital, and its benefits are so great, that such a campaign, entirely aside from the charitable and humanitarian character, may put us a long step forward in the fight against disease, and in the struggle for a healthier, stronger, and less crippled race.

ORGANIZATION OF THE BURKE CONVALESCENT HOMES

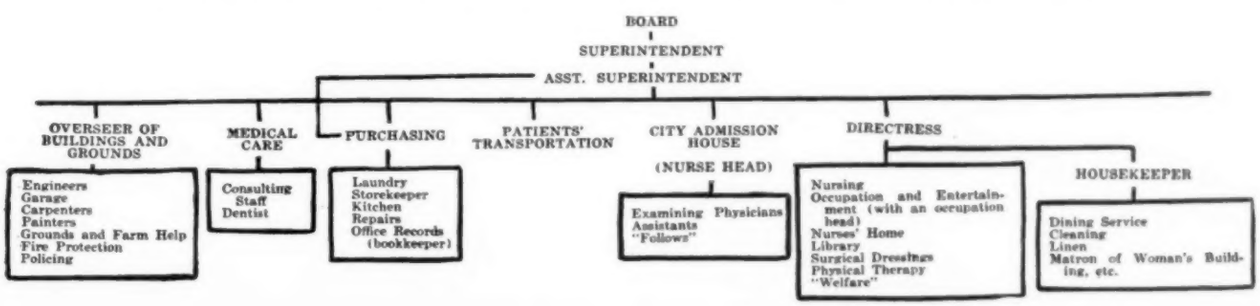
Scheme That Contemplates an Understudy for Each Department Head—Personality Dominates

BY FREDERIC BRUSH, M. D., SUPERINTENDENT

Many ideal schemes of institution organization are printed each year. One wonders whether they are ever tried out, or even attempted, in the form in which they are written. The institutional schemes already tested and in operation would doubtless be more instructive than these newly hatched ones.

Here is the plan which is being put into operation by the Burke Foundation for Convalescents at White Plains, New York. It will inevitably be modified and rebuilt around the personalities of those who carry it on. Persons have a way of breaking up diagrams—as they should.

All main heads have understudies. The housekeeper is a nurse, is under the directress, and becomes her assistant. Outlying farms and properties of the Burke Foundation justify the important position of the overseer of buildings and grounds; he is a graduate engineer. Local physicians make up the small consulting staff. The superintendent is the resident physician, and later will need an intern assistant. Cardiac consultants will be appointed, as the cardiac convalescents are to be admitted through special examiners. The few main heads are well salaried and cover wide fields. Additions to the force will therefore for a long time be in the lesser lists.



FEEDING THE HOSPITAL—THE CLASSES OF PEOPLE TO BE FED[1]

Surgical and Maternity Cases—The Interns and Nurses—The Hospital Employees—Making Out the Menus—Food Carts—Food Containers—Serving Pantries—Diet Training for Nurses

By LULU GRAVES, Dietitian Lakeside Hospital, Cleveland, Ohio

PAPER VII

THE diet is not so vital a part of the treatment of surgical and maternity cases as it is of medical cases, but indirectly it is an important phase of their treatment in the hospital. As a rule, these patients have good appetites and probably unimpaired digestion, and the need is not so great for exercising care to prevent them from eating the wrong thing. After the first few days precaution may be needed to prevent their eating too much. Frequently these patients, especially surgical cases, want a great deal to eat, or perhaps want to eat often because that is practically the only break in the monotony of the day. They should be urged to spend a long time at their meals—to eat slowly and masticate thoroughly. This lessens the danger of overtaxing the digestive organs and at the same time gives the patient a more satisfied feeling. Eating bulky foods, such as fibrous vegetables and fruits and large bowls of soup will also help in the same way; both of these measures will aid in preventing constipation, which might otherwise result from overeating and inactivity. The patient should be made to understand that a serious derangement of nutrition may be brought about by clogging up the system with more food than the body can oxidize or in other ways take care of.

It is common for patients—paying patients—to comment on the fact that they eat much more than they have ever done at home. It is evident that many of the private room patients in our larger modern hospitals are overfed. They are served an adequate menu by the house, and many extras by their friends. If they fail to consume all of this food their condition is considered by these friends more or less serious, and they bring a greater variety of things in order to tempt the appetite of the patient.

We do have many patients, however, who, for one reason or another, do not eat a sufficient amount of food. In some instances this may be due to a prejudice against institutional food or cooking; in more instances it may be due to the length of time the patient remains in the hospital. His inactivity leads to a loss of appetite and dissatisfaction with the food. Efforts should be made to induce these patients to take sufficient nourishment in some attractive form. An effective method is to serve some new dish, or to serve things in a different manner than has been previously done; to combine the needed food materials in novel ways, and to give the meal the nature of a surprise. Even well people enjoy the pleasures of anticipation of food, and this is far more true of the sick. Almost invariably they enjoy a meal more if there are elements of expectation and surprise connected with it. This is one reason for not having routine menus—a particular thing on every Monday, another on every Tuesday, and so on. Neither is it well to discuss the menu with the patient; an observant nurse can soon learn the things a patient will not eat, and avoid serving him things which are distasteful to him.

This brings up the question of "special orders" for patients; to just what extent shall we cater to the whims of a patient and just how much latitude can we give his wants? Not only should the line be drawn, but there should be a complete disregard of two prevailing reasons given for special orders in many of our hospitals—namely, "My patient is paying seventy-five or one hundred dollars (as the case may be) per week and is thereby entitled to these little extras," and "The doctor said he could have anything he wished." These statements are being met in each individual hospital according to its conditions and resources, but they are entitled to no consideration in any of them. This shows plainly another need—cooperation between the physician and the dietitian.

At Lakeside we have reduced the special orders to a minimum in the private and semi-private wards by putting out a menu which gives a rather wide variety of food. For instance, for breakfast there is a choice of fruits, two cooked and two "prepared" cereals, bacon and eggs, toast, rolls, and at all meals any of the common beverages may be chosen. For dinner there is a choice of a clear soup or a cream soup; a roast meat, or steak, or egg in any form; a baked potato or one prepared in some other way; two other vegetables; a salad; a frozen dessert, or some other kind; and we vary the menu as much as possible so that there shall be no monotony in the diet. If the patient still desires something which requires extra preparation there is an extra charge for it. It is not often that a patient cannot select enough

[1]This is the seventh in a series of papers on "Feeding the Hospital." Last month appeared "The Various Kinds of Foods," continued from January; next month will appear "Food Problems in Different Kinds of Hospitals."

from this menu to give him a satisfactory meal, even though there are some things being served which he does not care for.

The number of servings required in each ward is reported to the dietitian, and she posts it upon a bulletin board in the kitchen so that the cooks know just how much is to be prepared. This type of menu makes a little more work for the dietitian and the kitchen force, but not a great deal more than would be necessary in the preparation of many special orders; and it has the advantage of giving every patient the same privilege; while by the other method the number of "extras" a patient gets depends about as much upon the kind of a nurse he has as it does upon his actual requirement.

As a rule, maternity patients have very good appetites and with them, too, there is sometimes a tendency to overeat. This desire for large servings, or frequent serving, has been explained occasionally by saying that they must eat a great deal because they are eating for two people—though just how or why this is the case I have never been able to learn.

There has been a theory in the past that a mother should not eat acid foods or foods with a strong flavor during the early period of the child's nursing; it has been very satisfactorily proved, however, that the child is not affected by the diet of the mother so long as she confines herself to the things which for her are easily digested; and there need be no change in her method of eating provided her powers of assimilation are the same.

FEEDING THE INTERNS AND NURSES

Is it making too strong a statement to say that probably nowhere in the world will one find a class of people more critical of their food or more difficult to please than nurses and interns? We have some very good psychological explanations of this, but the critical attitude of these people remains much the same, and it seems to be pretty general in hospitals throughout the country. They almost invariably enjoy the food when they first enter the hospital, but sooner or later add their complaints to those of the earlier comers. Undoubtedly there are some instances where complaint is justified, but in many of the hospitals of my acquaintance the food is as good in quality and as great in variety as is to be found in the homes of people in a similar walk of life.

Much depends upon the resources of the hospitals, of course, yet it must be remembered that the food is cooked in large quantities, and must be cooked long enough before serving to allow time for it to be transferred to carriers of some sort, taken some distance, and made ready to serve to a number of people, and it is not possible to give to it the same characteristic flavors that may be acquired in a home where there is practically no time elapsing between the cooking and serving process. Then, again, where so many tastes are being catered to one must confine herself to neutral seasonings and mild flavors.

Hospital people work hard and meet great demands upon their physical force, and should have food which will rebuild tissue and furnish energy; their work is indoors, however, so their power of oxidation is not so great. The nature of their work and their environment unfit them for digestion of concentrated or heavy foods, or of much fat. For this reason meat three times daily, though that is one of the most common demands, is not desirable, and rich puddings or pastry should be given sparingly. The mode of life of the hospital operative is conducive to constipation, so fruits, green vegetables and salads should be served as much as possible. Now that we have good brands of dried, preserved and canned fruits which may be made most palatable, fruit is not beyond the reach of any hospital. Apples, bananas, dates and figs are not expensive and make splendid combinations with cereal for breakfast, or may be used in salads, or in desserts for luncheon; apples and bananas when baked or fried may serve in place of a vegetable, or may be inexpensively made into fritters. This year oranges and grapefruit have been so moderate in price that the fruit question has been an easy one.

Cereals, including rice, macaroni and spaghetti, are staple hospital food materials, but are generally scorned. They are, nevertheless, desirable substitutes for meat, not only because they cost less money, but because they have much food value, are easily digested, and furnish bulk, which indoor workers need in their diet. When well cooked they can be made very palatable, and are susceptible of so many combinations with other food materials that they give much variety to the menu. Cream soups, purées and chowders have high nutritive value and are most appetizing luncheon dishes; the lighter forms of meat, like bacon, liver, stuffed calf hearts, tongue, hot or pickled; cheese in an almost endless variety of forms (such as fondue, creamed cheese on toast, cottage cheese salad, or cheese on potato, rice or macaroni); macaroni and fritters, already mentioned; and the salads which lend themselves to so many ways of serving—all may be utilized to good advantage for the lighter meal of the day and are not too expensive for the hospital of limited means.

It is better, if possible, to serve luncheon at noon and dinner at night. The nurses are more fit for the afternoon work if not digesting a heavy meal while trying to concentrate on their duties.

Dinner, being the main meal of the day, is the one over which we like to linger just a little; and it is highly desirable that the food be so well prepared and served that it will not intrude itself upon the conversation, as it will undoubtedly do if it is not pleasing.

The nurses and doctors are entitled to the best that the hospital can afford to give them; it is but small return for their best service, which is given to the hospital. They should have plenty of food of good quality, cooked and served as well as can be done in the hospital. They, as well as the patients, base as much of their satisfaction with the hospital and their life in it upon the food as upon any other feature. Only when people are happy and contented can they give of their best work. We may not in our time reach the point of feeding the people in a hospital to their satisfaction, or to our own satisfaction, but we can make the best of all available material; and even though we must use the same things repeatedly, they can be used in enough different ways to prevent unappetizing monotony. It is, indeed, disheartening to look ahead for a year and know that you are going to have the same thing every morning, or every Monday or Wednesday, during the whole stretch of time. Nor is there any economy in that method; it leaves scant opportunity to utilize stock on hand. There will always be food in the ice box or store room which cannot wait until the prescribed day for it to be used.

FEEDING THE HOSPITAL HELP

Then we have the problem of feeding the "help" of the hospital. The chief difficulty in feeding these people, I find, is to convince them that you are interested in their meals as well as in the other food of the hospital. When they know that the selection and preparation of their food is given care, and that they are not receiving only that which is unavailable for the other people, they are not likely to make complaints. It is a great mistake to allow a great deal to be left over from other parts of the house, and to use it up on the help. In the first place this is extravagance; in the second place it gives them the impression that they are being fed upon scraps.

The "help" must have plain, substantial food and plenty of it. They do not care for "fancy dishes" and as a rule do not demand as much variety as the other inmates of the hospital. This does not mean that they may be given the same things again and again day after day, but a reasonable amount of variety is usually satisfactory.

MAKING OUT THE MENUS

In the making of menus there are many things to be considered which, to an outsider, may seem of minor importance, but which count for much in getting out meals. Everyone recognizes the fact that the buying must be governed by the funds available for the commissary department, but not everyone is familiar with vast differences in markets, their methods of filling orders and their facilities for delivering. The length of time to be allowed in advance in making out menus depends almost entirely upon the market's delivery system. The number of employees in the kitchen and their competency modifies the menu very much, as does also the kind of equipment in the kitchen. Naturally the better manned a kitchen is the more effectively can the work be done. It is no economy to employ an unskilled cook at a low salary. The best results cannot be obtained when the kitchen force is so limited that everyone is working up to the limit of his capacity all of the time. In no other part of the house are the hours so long as in the kitchen, nor so rigid in that the work must be done by a certain time every day, with no possibility of leaving some of it over for another day; yet it is very seldom that the kitchen department is given the same consideration and its system or regulations shown the same respect as is accorded other parts of the house.

Our present system makes it necessary for our menus to be made up three days in advance. Therefore we very frequently find it necessary to change them when the day arrives, as we find something in our store rooms which should be used, or find that what we planned could not be found in the market that particular day in as good condition as we wished, or discover some other reason for substituting another article of food.

Another problem which seems almost to have baffled solution thus far is the conveying of food from the kitchen to the various serving pantries in such a manner that the hot things will be hot and the cold things will remain cold, and everything be in proper condition when it reaches its destination.

FOOD CARTS

There are food carts with devices for keeping food hot by means of hot water compartments or other heating devices, but these do not provide for the foods to be kept cold; besides, they are very heavy, even when empty, and when loaded with food are often too much for one man to manage. The German Hospital in New York City has a cart with compartments for different foods and for the necessary dishes; this is taken into the ward and instead of serving from a pantry the serving is done from the cart with a minimum handling of materials, and no waste of time in the ward. This necessitates, however, a cart for every ward and a very efficient elevator service; and there will be

some complications in getting these carts filled and out of the kitchen, unless the arrangement of the kitchen space is well adapted to the use of the large number of carts.

If a cart could be built with compartments for both hot and cold foods, with insulated partitions between, or shelves, simple in construction and with few complicated parts to get out of order, and light enough to be drawn by a man, it would fill our needs.

The Elwell Parker Electric Co., of Cleveland, are putting out a cart which has these insulated shelves and compartments for hot and cold food, but it is built only in connection with and for use on their electric motor truck. The price is $1,100, or $1,200, so it would not be practical unless it could be used for delivery in all departments, as not many hospitals would feel justified in spending that sum for the delivery of nothing but kitchen supplies. Food containers of heavy pressed tin, or copper or aluminum, with insets of the same material and devices for surrounding these insets with hot water, are perhaps as satisfactory for keeping food warm as anything in general use. These containers when sent out in closed carts will keep food sufficiently hot for a reasonable length of time; but they are disastrous to gelatins or salads that happen to be sent out at the same time, as is usually necessary.

FOOD CONTAINERS

These food containers are better in the serving pantries than a steam table, provided there is stove space enough to permit of their being placed over a flame. In transferring the food to the steam table insets, time is lost and the extra handling detracts from the appearance of the food. Serving pantries are usually small, and the heat from the steam table makes the room very uncomfortable for the ones doing the serving. Then, too, the warm, moist atmosphere of the room makes it impossible to allow the salads and cold desserts to remain in the room even during the serving time, and not many of our serving rooms have sufficient ice box space to accommodate these things. It would be very convenient to have one section of the refrigerator built with many shelves just far enough apart to permit dishes filled with salad or dessert ready to serve to be placed on these shelves and taken out only as needed. All too many ice boxes do not have enough shelf space, but do have too much waste space between the shelves.

SERVING PANTRIES

Serving pantries should be provided with shelves or racks with space enough to permit all trays to be set with the necessary dishes before serving begins. The more expeditiously the serving can be done, the more palatable will be the food. With the trays all set and the cold things all served and in the ice box, the process of getting out the trays may be a very simple one. With some patients the appearance of the tray may determine whether or not the food will be eaten. It is a common error to serve too much on a tray. To some patients this is repulsive, and the majority of them are not in a condition to digest large amounts of food; it is far better to give dainty servings with the understanding that more may be had if desired. The question of economy is no small one when two hundred or three hundred people are being served and the large majority of them being served more than they can eat. This same question of economy applies to the preparing of eggnogs and orangeades and the heating of broths and gruels. The amount needed should be measured out before preparing, leaving none to be thrown in the sink, as is too frequently done. Such things as these are the cause of the divergence of opinion between the kitchen and the ward with regard to quantities needed.

DIET TRAINING FOR NURSES

The nurse's training in dietetics comes into use when she does the serving in the wards, and it is unfortunate if she has not had at least her diet kitchen training before she does any serving. This training enables her to give much better service to the patients and to the hospital, and it is quite essential where there are many special diets to be served.

It is only by keeping in close touch with the various wards and knowing the needs of each that she can give the best service to the patients with a minimum of work in the serving pantries, and without overtaxing the working capacity of the kitchen. In order to keep expenses as they should be she must have full knowledge of the store rooms and the markets.

Though there may be a very rigid system regulating requisitions for supplies in other parts of the house, the general impression in the average hospital is that the kitchen is managed on the short-order restaurant plan and that anything desired should be obtainable at any time desired.

The recognition of the commissary department as an organized part of the whole scheme, with which almost every other department is more or less intimately connected, is so recent that we scarcely realize that it exists. With this recognition is coming a demand that the department be placed on a higher plane, and a higher standard is being set for the person in charge, whether he be cook or dietitian.

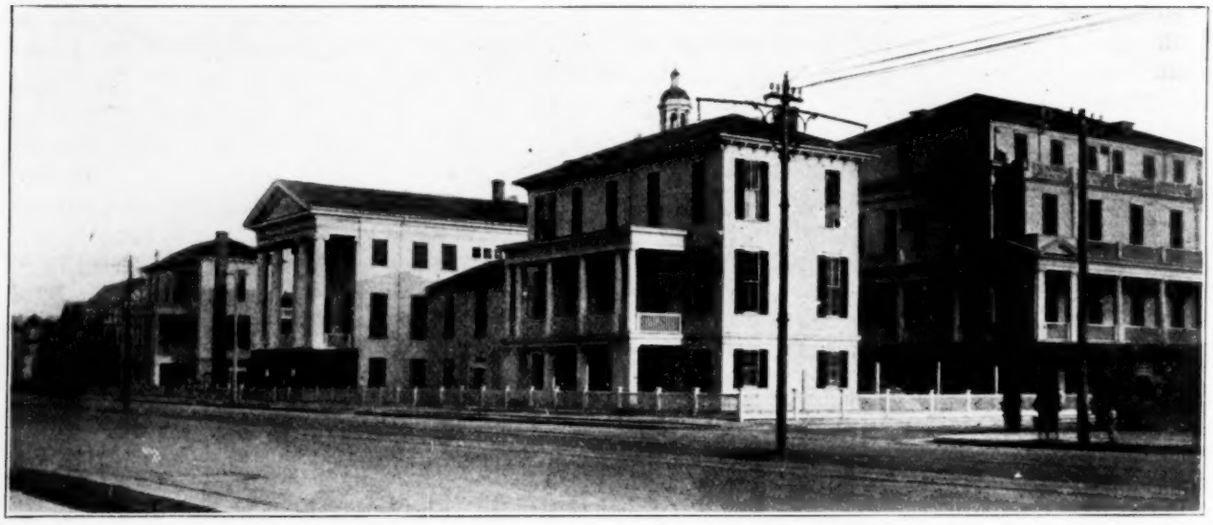


Fig. 1. Children's Seashore House—Western front of the group.

FORTY YEARS OF THALASSO-THERAPY

The Work and Achievements of the Children's Seashore House for Invalid Children at Atlantic City, New Jersey—Thousands of Mothers and Children Rescued—Some By-products of Experience

By WM. H. BENNETT, M. D., Physician in Charge

ATLANTIC CITY has in the Children's Seashore House for Invalid Children the largest children's institution devoted to thalasso-therapy in America. It has accommodations for four hundred and annually cares for over thirty-six hundred persons. It is also the oldest institution of the kind in the country.

It was organized in 1872 and began its work then in a little cottage containing thirteen beds. The following year it was opened in a building erected right on the beach for its special purposes, with accommodations for forty children.

As its work grew during the succeeding twenty-eight years, the capacity of this building was increased until there was room in it and its dependencies for two hundred and twenty-five patients.

In 1902 its old quarters were abandoned, and its present commodious group of buildings was erected with accommodations in all its departments for over four hundred.

The present institution occupies a whole city block in the Chelsea District of Atlantic City and is bounded on three sides by wide streets, while on the fourth is the beach and the ocean beyond. The location is ideal.

On one side, the buildings face the principal avenue of the city, while on the other there is an unobstructed view of the sea. In the group there are ten buildings. In the main building there are accommodations for seventy-two patients. It is surrounded on four sides and on two floors by ample porch room, a feature which plays an important part in the daily life of the institution. Connected with the main building at each end is a large ward building accommodating sixty patients. These two buildings are likewise surrounded by ample porches, giving in all a stretch of about twelve hundred feet of porches ten feet wide.

From the ocean front of the main group of buildings there extends seaward on each side of the grounds a double row of "Mothers' Cottages," little connected cabins, nine by twelve feet, sufficiently low to cause no obstruction to the sea view or sea breeze. Each of these is intended for the accommodation of a mother with her sick infant and such well children as she may be obliged to bring with her. Ample dining rooms and laundries are provided for these mothers. They do their own laundry work and care for their own little cabins, but their own and their children's meals are provided for them in excellent quality and in great abundance. In a special diet kitchen modified milk and other food for their babies is prepared under the direction of the physicians, and served at prescribed hours.

In one corner of the grounds, on the beach, is a ward for sick infants who cannot have their mothers' care.

Extensive facilities have been provided for ocean bathing, not only for all children who are able to bathe, but also for their mothers. Often

from one hundred and fifty to two hundred bathe in the ocean in a single day.

Facing the main avenue of the city are three most important buildings. In the center is the domestic service building containing the kitchen, in which the meals for nearly five hundred are cooked; the many dining rooms in which they are served; and the bed rooms in which the servants are lodged. On one side of it is the steam laundry, and on the other the isolation building, for cases of contagious disease originating in the house.

The institution was intended for the sick and delicate children of Philadelphia, and among its first inmates were children from the hospitals of the city. During the first thirty-eight years of its existence it was open in summer only, but since 1910 some portion of the institution has been open throughout the year.

At first only children under twelve years of age were admitted, but gradually its scope has been widened until now it receives children of all ages from the youngest infant to the girl of twenty, and in its summer camp off in the sand dunes, boys of sixteen.

The work of the institution may be classified under four heads: first, the baby-saving work; second, its fortifying work for delicate children not yet ill; third, its work for convalescents; fourth, its work for children with bone and gland diseases.

The work under the first head is carried on in summer, principally in the Mothers' Cottages already referred to. They have accommodations for thirty-six mothers and one hundred children. In this branch of the work the mothers are made partakers of the benefits bestowed upon their children, often because the mother and her nursing child cannot be separated, but more often because it is realized that the first step toward helping a sick infant should be the building up of its careworn mother.

To each mother with a sick infant is assigned one of the little cabins and if she has several other little ones too young to be left at home, she is allowed to have them with her. She and her little family have the exclusive use of it.

In this department of the work a large number of cases of gastrointestinal troubles in infants are treated with great success. The debilitating summer heat and the use of unfit food are the two most important factors in their causation. At the institution suitable food prepared by the dietitian under the direction of the physicians, and the cool, invigorating sea breezes have a magic influence on the children brought from the unsanitary conditions in their hot city homes. They revive at once, and great improvement or complete restoration is the usual result. Over twenty-five hundred cases of gastrointestinal disease have been cared for up to the present time.

The fortifying work included under the second head reaches the largest number of children. It is carried on in the ward buildings and in the camp for boys. Thousands of children are taken from the most congested portions of Philadelphia, where want and insalubrity reign and given a week or more of abundance and happiness in the pure air and sunshine of the seacoast.

Since its organization over sixty thousand have been thus cared for and it is believed that the fresh vigor which this large number has acquired at the seashore has during the last twenty-five years been a powerful factor in improving the physical condition of the poor in Philadelphia.

The work for convalescents is a very large one. Scores of children from the city hospitals recovering from surgical operations and all manner of illnesses are received every year. A short stay at the seashore after weeks in the hospital ward

Fig. 2. Children's Seashore House—Facing the ocean.

usually converts an ordinarily tedious convalescence into a short, happy one. Up to the present time three thousand medical and nearly one thousand surgical convalescents have been cared for.

The work for children suffering from bone and gland disease began on the opening day of the institution forty years ago, and it has steadily grown until at present there are usually to be found more cases of these diseases in the wards of this institution than in any one hospital in Philadelphia. One hundred and sixty such cases were treated in the past year, and as each was

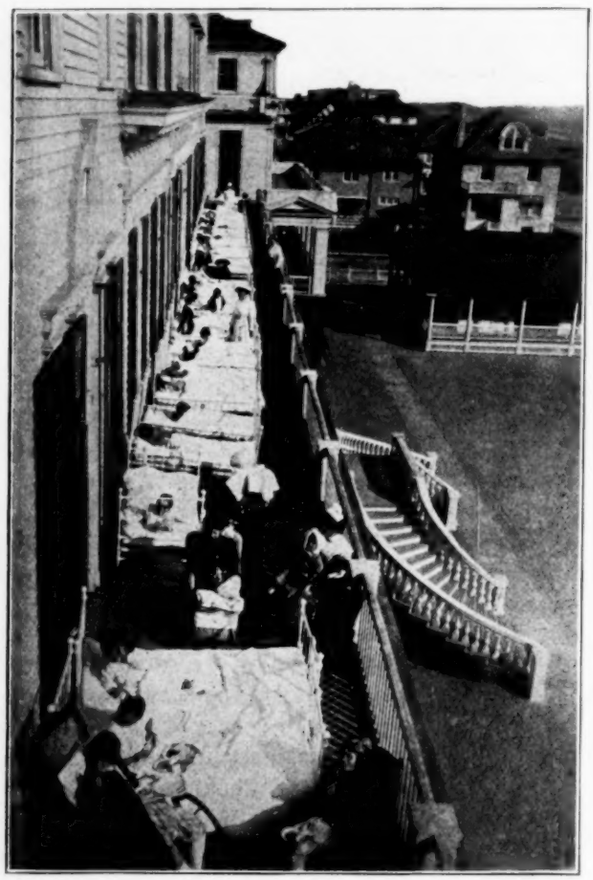


Fig. 3. Children's Seashore House—Sun bath porches. (Note the mothers' cottages below the porch.)

allowed to remain long enough to gain substantial benefit the seventy-two beds of the building devoted to their care were constantly full. Not a few remained throughout the year. As these are the cases which most need the sea air, they are given the preference, and the work done for them seems likely to overshadow the other work of the institution. This work is probably already larger than that done in any similar institution in America and it is steadily growing. If the funds of the institution permitted, it could be made four times what it is at present without the erection of any additional buildings.

The changes which take place in children under the seashore influence are very wonderful. It is a common experience at the Children's House for parents to fail to recognize their own children. Mothers have refused to accept their children until it was proven by scars that there was no mistake. Physicians, too, fail to realize that the healthy children returned to them are the pale, puny patients whom they sent to us a few weeks before. What is the real cause of the change we do not know. We do know that there is something in the seashore air which stimulates the appetite and aids the digestion. The first experience of the newcomer is a desire for food. The child who, in the city hospital, has been forced to eat, often enjoys voluntarily a hearty breakfast on the morning following its arrival. This appetite usually lasts as long as the child remains and in consequence there is a rapid gain in weight. This is especially true of convalescents, who, of course, gain anywhere, but most rapidly at the seashore. A gain of a pound a day for two weeks for a boy of fourteen is not an exceptional occurrence after typhoid fever.

There are a few exceptions to the almost universal rule of the steady gain, and it is as difficult to explain them as it is to give a reason for the good appetite of the majority.

While the improvement in general health is almost invariable, the improvement in local conditions in the many cases of bone disease treated at the institution is not so constant, although the two frequently correspond. On examining the records of the past year we find that out of 147 cases of bone disease admitted all except 8 showed a marked improvement in general health, but only 108 showed a corresponding improvement in local conditions. Of 23 cases of gland diseases admitted all except one were greatly improved, both in general health and in local conditions.

At this institution no selection of cases is made on admission. All needing thalasso-therapy are received without regard to the effect of this plan upon our statistics. Our records therefore do not show results as uniformly good as if only hopeful cases were received. The best results can, of course, be obtained when the bone disease is in its incipiency, and it is the incipient cases which should be sent away from the crowded wards of the city hospitals to the invigorating atmosphere of the seashore.

The treatment at the Children's Seashore House, apart from its surgical aspect, is almost entirely hygienic. Medicines play a very insignificant part in it. Food is given the first consideration; it is supplied in an abundance and in an appetizing form. Only the best bread and butter,

the freshest eggs and meat are purchased. Fresh vegetables and fruit are supplied as long as they are in season. Milk is supplied literally without limit; but while a child is allowed to have all it will drink, no child is required to drink a set amount. Eggs are used without stint, but only as they would be in the comfortable homes of those who do not need to economize. They are usually cooked. There is no forcing of raw eggs on rebellious stomachs. When the appetite is as good as it is at the seashore, compulsion is unnecessary. Fresh air in abundance day and night is insisted on. The nights are passed in large wards with open windows, and on every day that it does not rain or snow, the bedridden are wheeled to open porches where they stay until dusk, in sunshine and fresh air. The strictest cleanliness is enforced at all times, and in summer children able to bathe in the ocean have their daily sea baths. Children, however, who have bone disease of an acute form and who would be likely to be made worse by any sudden and unavoidable wrench which the waves might give are not allowed to bathe in the ocean. Tub baths of salt water are not used, as they are believed to have but little advantage over fresh water baths of the same temperature. Whatever advantage sea-bathing has, and it is very great, must in a large measure be attributed to the massage of the waves and the exercise and exhilaration of the sport. The remedial effect of the contact of salt water with the skin is probably insignificant.

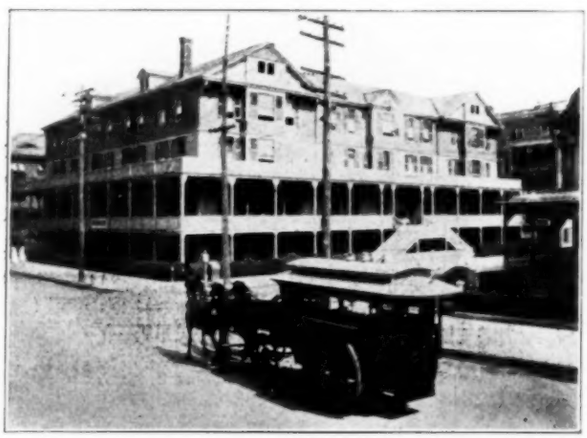


Fig. 4. Children's Seashore House. (Note the broad expanse of porches and sun bath rooms and wards.)

Following the example of Rollier, heliotherapy has been given a very fair trial. The exposure necessary in carrying it out has still further fortified our children against the effects of changes of temperature, and contributed to the building up of their general health, but we have not been able to get at the seashore the wonderful results Rollier has reported in the mountains at Lysin.

For many years mental sunshine has been considered a psychotherapeutic agent of no mean importance. The teachings of Crile in regard to anoci-association may perhaps suggest a scientific basis for its efficiency. Happiness is cultivated throughout the institution. There is no suppression of youthful spirits. The children talk, laugh and sing and shout in the wards as freely as they would in their own homes, while diversion is provided by toys, games, music, and, best of all, by daily lessons given by a teacher who is one of the regular employees.

In the treatment of our many cases of bone disease, advantage is taken of every means that modern orthopedic science has suggested in the way of casts, extensions and braces, to keep the parts at rest and in good position.

The seashore offers a very great advantage in the treatment of joint affections, in that it is seldom necessary to hasten the getting a patient out of bed for hygienic reasons as must so often be done in the hospitals and homes of the cities.

The appetite and general condition of bed-patients usually keep good in the sea air and children are therefore able to have without detriment the very great benefit of prolonged rest in bed to an extent which they cannot have elsewhere.

As in most of the cases coming to us from the city hospitals needed operations have already been performed, there remains for us only to give each child the best surgical care and all the benefits which the sea air has to offer. All the promising suggestions for the treatment of abscesses and sinuses in the way of pastes and antiseptic injections have in turn been given a thorough trial. Many of them had already been tried in the city hospitals, and when we realize of how little avail most of these methods of local treatment have been and see the great changes which take place in most of the children after their arrival at the seashore we are forced to conclude that the secret of the change lies in the sea breeze blown over an expanse of three thousand miles and laden, not as is the land-born wind with innumerable harmful particles, but with the salt spray, the health-giving "dust of the ocean."

We cannot fathom the secret of its cure, but in our ignorance we call it thalasso-therapy.

The new St. Luke's Hospital at Marquette, Mich., was opened January 28. It represents an outlay of $100,000, $70,000 having been expended on the building and $30,000 on the equipment. The hospital was constructed of tile, concrete and brick. It is three stories high with a large basement. The equipment includes an electric elevator, sterilization facilities, an x-ray room and a pathological laboratory. Accommodations for fifty-two patients have been provided, with room for additional beds when needed.

Through the efforts of the local commercial club a hospital has been established at Sapulpa, Okla.

CEREAL BREAKFAST FOODS—COMPOSITION, DIGESTIBILITY AND RELATIVE VALUE

Study of a Most Important Class of American Foods for Health and Sickness—Methods of Their Preparation in the Factory and in the Home—Selection for Various Circumstances

By JOHN PHILLIPS STREET, M. S.,
Chemist, Connecticut Agricultural Experiment Station

PAPER II.

THE cereal foods occupy a very important place in the diet of the American family, both in sickness and in health. Vegetable foods supply about 95 percent of the carbohydrates in the average dietary, and the cereal foods themselves fully 55 percent. Grains in the raw state are unattractive to the taste and are somewhat difficult of digestion, and for this reason cereals are generally cooked before eating. The oldest method of cooking them was by parching, and in the early days the Scotchman's oatmeal and the Indian's maize were prepared in this way. The next development was porridge, in which the grain was boiled or steamed with water, milk or meat stock, and thus rendered more palatable. Porridge, however, requires prolonged cooking, its keeping qualities are poor, and it is far from being a convenient food preparation. In spite of these disadvantages —and the necessary long cooking is by no means an unqualified disadvantage—porridge has enjoyed a wide use and popularity, and the modern cereal breakfast food is its lineal descendant.

A generation ago practically the only cereal foods on the market were wheat flour, corn meal, hominy and hulled corn; barley, rye and rice finding only a very limited use. At the present time we find an almost endless number and variety of these specially prepared breakfast foods offered for our use. Some of the brands endure but for a season, while others have taken a fixed place in the long list of American food materials. Many of the brands, however, are exploited by extensive and expensive advertising and live only so long as a fluctuating public taste demands them. As has been well said: "It is safe to say that of those on sale today fully one-half will disappear within three years or will survive only on the top shelf of the country grocery, a food for worms rather than for men."

However, while the brand names of the foods may change, the types of cereal breakfast foods which they represent persist from year to year. There are four main types of these foods; those in which the grain is simply husked and more or less crushed or ground; those which have been steamed or partially cooked at the factory and then ground or rolled and dried; those which have been cooked by dry heat only, such as Puffed Rice or wheat; and those which have been acted upon to a greater or lesser extent by barley malt, and the insoluble starch correspondingly converted into a soluble form, as in the so-called "malted" foods.

The grains used in this country in these products are oats, wheat, corn, rice, and less commonly barley and rye. Although the various flours, starches, tapioca, and edible cereal pastes (noodles, macaroni, vermicelli and spaghetti) are in a sense cereal breakfast foods, a discussion of them is beyond the limits of the present paper. While the composition of the different cereal grains varies with the variety, the locality, the character of the season, the soil, and the kind of fertilizer used, their average composition as shown in Table I is sufficiently accurate for ordinary use.

Table I. Composition of Cereal Grains.

Cereal.	Water.	Ash.	Protein (N x 6.25).	Fiber.	Nitrogen-free extract.	Fat.
Barley, unhulled.....	10.9	2.5	11.0	3.9	60.4	2.3
Corn	10.9	1.4	9.9	1.7	71.0	4.2
Oats, unhulled.....	11.0	3.0	11.8	9.5	59.7	5.0
Oats, hulled.....	6.9	2.1	15.3	1.3	67.3	8.1
Rice, unhulled.....	10.5	4.0	7.5	9.0	67.4	1.6
Rice, hulled, unpolished.	12.0	1.0	8.0	1.0	76.0	2.0
Rice, polished.....	12.4	0.5	7.5	0.4	78.8	0.4
Rye	10.5	1.9	12.3	2.1	71.7	1.5
Wheat	10.6	1.8	12.3	2.4	71.2	1.7

It will be observed from the table that oats is characterized by its high protein and fat content; wheat, rye and barley by high protein and moderate fat; corn by its relatively high fat; while rice is distinctly low in protein, and in the polished form almost free from fat, fiber and ash. These characteristics of the individual grains have an important influence on the composition of the breakfast foods made from them, as will be shown later. In the preparation of certain breakfast foods the grain is used in its entirety; in others the germ is more or less removed, thus materially reducing the percentage of fat; in others the ground product has been thoroughly bolted, thus insuring only a minimum of fiber; while in others

the use of heat or a malting process has materially altered the form of carbohydrates present. In certain of the "ready-to-eat" brands, salt, sugar, syrup or honey has been added, thus increasing the ash or carbohydrates and decreasing the relative percentages of the other ingredients. In general, however, the composition of the finished breakfast food closely follows that of the parent grain.

Barley is not a popular breakfast cereal in this country, and when it is used it is usually in the form of "pearled" barley with a much lower content of fiber, and considerably less of all the other ingredients, except carbohydrates, than found in the unhulled, untreated grain.

The germ of the corn kernel is rich in fat, which tends to rancidity on keeping, and is accordingly generally more or less completely removed in the preparation of corn breakfast foods. Hominy, samp and cerealine are names used quite loosely for corn products, which differ little from one another in composition, save that hominy generally carries a little more fat. They are all essentially carbohydrate foods. The toasted and flaked corn preparations are steamed and rolled grains, which have been cooked longer, and to which salt and a sweetening material are commonly added.

In the oatmeal of our forefathers much of the hull or husk remained in the ground product, but with modern improved processes only small amounts of this fibrous hull are found in the finished meal. The germ is not removed from the oat preparations. In the crushed or flaked oat foods the grain has been more or less cooked with steam, and while still moist rolled into thin flakes, and dried. Such products are of course only partially cooked, and further cooking is necessary before using.

The rice foods come to us either in the flaked form, or as "puffed" rice. In the latter form the rice has been treated by a special process of cooking with dry heat, the resultant product somewhat resembling popcorn in flavor and texture.

In the preparation of wheat breakfast foods the germ as a rule is not removed, and save in farina and the gluten preparations more or less of the bran and middlings are retained. In certain products the whole grain, bran and all, is used. The unground wheat grain is seldom used in breakfast foods, except in the "puffed" products (prepared in a way similar to Puffed Rice), and in frumenty, in which the husked grain is boiled with milk and spices. The latter preparation, however, has but a restricted use in this country. Where the grain is only moderately crushed and the bran not removed, the product is known as cracked wheat or wheat grits. The flaked wheat foods are prepared in the same way as rolled or flaked oats. Shredded wheat is prepared by a special process and represents the whole grain. The gluten breakfast foods are characterized by a very high protein content and only about half the starch usually found in wheat foods. They are intended primarily for those to whom much starch in the diet is objectionable, but as a rule the extent to which the starch has been removed falls far short of the manufacturer's claims.

In the so-called "malted" foods advantage is taken of the diastatic power of barley malt, the diastase of malt imitating the action of the diastase of the saliva and pancreatic juice. Generally the amount of malt added is not sufficient to convert more than a part of the starch into soluble forms. Analysis shows that in many of these foods the soluble carbohydrates exist largely in the form of dextrin and suggests the possibility of glucose or some other soluble dextrin-containing carbohydrate being added. Furthermore, it must not be forgotten that the treatment of starch with dry heat also produces dextrin, as illustrated in the case of ordinary toast. It is evident, therefore, that many of these "malted" foods are not deserving of the name, a criticism that will be considered in more detail later.

Aside from the constituent grains and the method of manufacture the cereal breakfast foods are of two general classes, those which are either raw and which need prolonged cooking or which have been cooked to some extent and need further treatment before use, and those which are "ready-to-eat." Pearled barley, hominy, samp, corn meal, oat flakes, cracked wheat and farina are types of the first class, while among the "ready-to-eat" preparations we find such products as cerealine, corn flakes, flaked rice, Puffed Rice, rusk, Shredded Wheat, Force, Grape-Nuts, Puffed Wheat and some of the various "malted" foods.

Table II gives the analyses of one hundred and eighteen of these products; sixty-seven of these were made in the writer's laboratory, thirty-three by Frear of the Pennsylvania Experiment Station, eight by Robison of the Michigan Station, and ten by Merrill and Mansfield of the Maine Station, these authorities being designated respectively in the table by the letters C, F, R and M. It is not claimed that this tabulation is complete in any sense, for, as already stated, many of the brands are exceedingly short-lived and new ones are constantly appearing. It is also true that analyses made of the same brand at different times often show considerable fluctuation in composition, depending upon varietal, climatic and seasonal conditions, and other factors. However, the table

TABLE II. COMPOSITION OF TYPICAL CEREAL BREAKFAST FOODS.

Authority.	Brand.	Manufacturer.	Net weight, oz.	Cost.		Water.	Ash.	Protein (N x 6.25).	Fiber.	Nitrogen-free extract.	Ether extract (fat).	Starch.	Water-soluble matter.	Calculated calories per 100 gms.
				Per package, cts.	Per pound, cts.									
	Barley Preparations.													
C	Barley Crystals	Farwell & Rhines, Watertown, N. Y.	31.9	25	12.5	9.9	1.2	11.5	0.9	75.2	1.3	62.7	....	359
C	Scotch Brand Pearled Barley	Quaker Oats Co., Chicago	17.8	10	9.0	12.1	1.0	9.5	0.3	76.2	0.9	69.2	6.7	351
F	Ralston Health Barley Food	Ralston Purina Co., St. Louis	29.0	15	8.3	8.9	1.0	10.0	78.7		1.4	....	....	367
	Corn Preparations.													
C	Cerealine	American Hominy Co., Indianapolis	10.4	9	13.8	11.2	1.5	6.9	0.1	79.9	0.4	60.2	23.1	351
C	E-C Corn Flakes Toasted	Egg-O-See Cereal Co., Chicago	10.3	10	15.5	12.1	2.2	6.6	0.2	78.6	0.3	61.3	30.5	344
F	Egg-O-See, Corn Flaked and Toasted	Egg-O-See Cereal Co., Chicago	16.6	10	9.6	10.7	2.5	7.1	0.3	79.2	0.2	....	....	347
F	Elijah's Manna	Postum Cereal Co., Battle Creek, Mich	21.7	15	11.1	7.2	1.4	7.1	0.3	83.8	0.2	....	....	365
C	F. S. Granulated Hominy	Quaker Oats Co., Chicago	74.1	25	5.4	13.3	0.4	8.0	0.2	77.1	1.0	75.7	3.0	349
M	Hecker's Hominy	Hecker-Jones-Jewell Mill. Co., New York	48.2	15	5.0	10.4	0.4	8.8	0.3	79.2	0.9	....	....	360
C	H-O New Process Hominy	The H-O Co., Buffalo, N. Y.	29.9	10	5.3	11.3	0.4	8.0	0.2	79.8	0.3	74.4	2.9	354
C	Kellogg's Toasted Corn Flakes	Toasted Corn Flake Co., Battle Creek, Mich	9.7	10	16.5	11.7	2.7	6.4	0.2	78.8	0.2	55.5	29.2	343
C	Korn Kinks	The H-O Co., Buffalo, N. Y.	8.1	5	9.9	12.0	2.2	7.4	0.1	77.9	0.4	66.3	15.7	345
F	Korn Krisp	The Korn-Krisp Co., Battle Creek, Mich	16.2	15	14.8	9.2	2.8	9.0	0.8	76.9	1.3	....	18.9	355
M	Nichols Pearl Hominy	Austin, Nichols & Co., New York	78.7	22	4.5	9.3	0.2	8.5	0.3	81.3	0.4	....	....	363
C	Nichols Snow White Samp	Austin, Nichols & Co., New York	30.9	10	5.2	13.4	0.3	7.8	0.5	77.7	0.3	78.2	2.6	345
M	Pierce's Hominy	S. S. Pierce Co., Boston	bulk.	....	5.0	10.9	0.3	8.1	0.3	79.8	0.6	....	....	357
C	Post Toasties	Postum Cereal Co., Battle Creek, Mich	10.8	10	14.8	11.7	1.8	6.6	0.2	79.4	0.3	53.9	29.4	347
C	Quaker Toasted Corn Flakes	Quaker Oats Co., Chicago	10.7	8	12.0	11.6	1.3	6.8	0.0	79.9	0.4	68.2	28.4	350
C	Quaker Yellow Corn Meal	Quaker Oats Co., Chicago	46.4	12	4.1	12.3	0.5	7.5	0.2	78.7	0.8	75.7	2.2	352
C	Ralston Hominy Grits	Ralston Purina Co., St. Louis	29.9	10	5.3	11.3	1.0	9.0	0.4	75.4	2.9	70.9	5.3	364
C	Street's Perfection Hominy	S. H. Street, New Haven, Conn	31.0	6	3.1	12.4	0.4	7.9	0.1	77.9	1.3	74.5	3.4	355
F	Toasted Cerealine Flakes	American Hominy Co., Indianapolis	9.8	10	16.3	8.8	0.8	7.4	0.3	82.4	0.3	....	....	362
	Oats Preparations.													
R	American Flaked Oat Groats	American Cereal Co., Chicago	32.0	10	5.0	9.1	1.8	18.4	2.5	61.0	7.2	54.4	9.3	382
M	Banner Rolled Oats	American Cereal Co., Chicago	68.6	25	5.8	7.7	1.9	18.0	0.9	64.7	6.8	....	....	392
M	Buckeye Rolled Oats	American Cereal Co., Chicago	31.5	10	5.1	9.6	1.7	14.5	0.9	66.8	6.5	....	....	384
C	Grandmother's Crushed Oats	Great Atlantic & Pacific Tea Co., New York	28.1	10	5.7	10.7	1.9	14.9	0.6	65.4	6.5	59.1	5.1	380
C	Health Brand White Oats	Lewis De Groff & Son, New York	32.9	12	5.8	10.9	2.0	13.8	1.0	64.5	7.8	58.8	7.6	383
C	Hornby's Steam Cooked Oat Meal	The H-O Co., Buffalo, N. Y.	28.8	15	8.3	10.6	1.7	16.1	0.8	64.1	6.7	59.2	5.8	381
C	Mother's Crushed Oats	The Great Western Cereal Co., Chicago	24.3	10	6.6	10.9	1.6	15.6	0.9	64.9	6.1	58.4	6.9	377
C	Paw-Nee Rolled Oats	The Pawnee Cereal Co., Cedar Rapids, Iowa	25.1	10	6.4	10.8	1.9	15.8	0.8	64.0	6.7	59.7	6.5	380
R	Pillsbury's Flaked Oat Food	Pillsbury-Washburn Flour Mills, Minneapolis	32.0	15	7.5	9.7	1.7	16.1	1.8	64.9	5.8	55.6	11.8	376
C	Premier 15-Minute Oat Flakes	Francis H. Leggett Co., New York	24.2	10	6.6	11.3	1.8	17.1	0.6	63.8	5.4	56.6	8.8	372
C	Pure Quaker Oats	Quaker Oats Co., Chicago	24.2	10	6.6	10.8	1.9	15.9	0.9	64.5	6.0	56.7	7.1	376
C	Sovereign 15-Minute Oat Flakes	Union Pacific Tea Co., New York	34.3	15	7.0	10.8	2.0	16.5	0.9	64.0	5.8	58.0	5.9	374
C	White Rose Rolled Oats	Seeman Bros., New York	30.4	12	6.3	10.3	1.9	14.3	0.7	64.8	8.0	59.0	8.2	388
	Rice Preparations.													
C	Cook's Flaked Rice	American Rice Food & Mfg. Co., Matawan, N. J.	15.1	12	12.7	12.6	0.4	7.8	0.2	78.9	0.1	78.2	4.2	348
C	Cook's Malto-Rice	American Rice Food & Mfg. Co., Matawan, N. J.	17.2	8	7.4	11.3	0.6	7.6	0.1	80.2	0.2	74.1	9.5	353
C	Milk Rice	Milkrice Co., Chicago	7.7	10	20.8	12.3	3.2	6.9	0.2	77.2	0.2	62.6	33.7	338
F	Nivara	New England Food Co., South Norwalk, Conn	18.0	12.5	11.1	7.1	1.7	11.8	0.2	79.1	0.1	....	....	365
C	Quaker Puffed Rice	Quaker Oats Co., Chicago	7.5	10	21.3	12.2	0.4	7.6	0.1	79.5	0.2	61.8	21.9	350
	Wheat Preparations.													
F	Apitezo	American Cereal Co., Chicago	18.0	12.5	11.1	7.9	3.0	16.6	0.5	71.8	0.2	....	....	355
C	Brusson Farine au Gluten	Brusson Jenne, Villemur, France	8.7	25	46.0	10.9	0.6	33.9	0.2	53.8	0.6	48.8	....	356
C	Brusson Gluten Semolina	Brusson Jenne, Villemur, France	7.4	30	64.9	9.7	0.7	17.2	0.3	71.6	0.5	64.9	....	360
C	Cerena	Cerena Milling Co., Chicago	15.2	25	26.3	7.2	4.9	27.8	2.4	46.3	11.4	25.1	25.4	399
C	Christian's Laxative Cereal Flakes	Christian's Natural Food Co., New York	21.3	25	18.8	13.1	1.7	10.4	1.0	72.4	1.4	61.2	11.4	344
C	Cream of Wheat	Cream of Wheat Co., Minneapolis	28.7	15	8.4	13.1	0.6	11.5	0.2	73.7	0.9	71.1	6.8	349
R	Crescent Wheat Flakes	Lake Odessa Malted Cereal Co., Lake Odessa	16.0	15	15.0	9.5	3.2	9.3	1.6	74.7	1.7	60.6	18.3	351
C	Cresco Grits	Farwell & Rhines, Watertown, N. Y.	31.7	25	12.6	11.1	0.6	17.8	0.5	68.6	1.4	54.1	....	358
C	Crystal Wheat	Battle Creek Sanitarium Co., Battle Creek, Mich	23.7	15	10.0	9.5	1.9	11.3	1.7	73.6	2.0	....	....	358
F	Egg-O-See	Egg-O-See Cereal Co., Chicago	13.4	10	11.9	8.2	2.2	10.9	1.4	76.1	1.2	....	....	359

C	Force	The Force Food Co., Chicago	12.9	15	18.6	10.7	2.8	10.6	1.1	73.7	1.1	60.0	12.8	347
M	Fould's Wheat Germ Meal	Fould's Milling Co., Cincinnati, Ohio	28.3	13	7.3	10.2	1.4	12.8	1.0	72.0	2.6	....	....	363
F	Go	American Cereal Co., Chicago	14.2	10	11.3	8.8	1.9	10.8	2.0	75.0	1.5	....	....	357
C	Grandmother's A. & P. Farina	Great Atlantic & Pacific Tea Co., New York	16.2	6	5.9	12.9	0.6	10.8	0.1	75.0	0.6	71.7	6.8	349
F	Grandmother's Breakfast Flakes	Great Atlantic & Pacific Tea Co., New York	13.5	10	11.9	6.8	2.5	10.0	1.6	77.7	1.4	....	....	363
C	Granola	Kellogg Food Co., Battle Creek, Mich	13.1	10	12.2	6.1	2.3	13.9	0.6	76.3	0.8	45.2	....	368
C	Granose Biscuit	Kellogg Food Co., Battle Creek, Mich	5.2	15	46.2	11.3	3.9	10.3	1.8	71.1	1.6	....	....	340
M	Granose Flakes	Kellogg Food Co., Battle Creek, Mich	10.7	15	22.4	7.7	3.0	11.4	2.0	74.8	1.1	....	....	355
C	Gum Gluten Breakfast Food	Pure Gluten Food Co., New York	16.4	20	19.5	7.5	1.2	37.8	0.4	51.8	1.3	37.9	...	370
C	Gum Gluten Granules	Pure Gluten Food Co., New York	16.0	20	20.0	7.5	1.5	45.5	0.3	43.6	1.6	32.3	....	371
F	Gust-O	The Pawnee Cereal Co., Buffalo, N. Y	9.2	10	17.4	8.1	2.9	10.3	1.3	76.2	1.2	....	....	357
F	Hardyfood	C. F. Hardy Co., Marshall, Mich	12.1	10	13.2	8.4	1.8	9.4	1.9	77.1	1.4	....	...	359
C	Hazard's Wheat Protein Breakfast Food		....	....	....	8.5	0.7	40.1	49.7		1.0	....	....	368
C	Hecker's Farina	Hecker-Jones-Jewell Mill. Co., New York	15.8	10	10.1	12.7	0.6	10.0	0.1	75.9	0.7	71.2	6.1	354
C	Holland Rusk	B. Arendhorst & Sons, Holland, Mich	6.7	10	23.8	11.0	1.3	12.1	0.1	70.4	5.1	55.8	16.6	376
F	Hower's Wheat Farina	American Cereal Co., Chicago	15.2	10	10.5	10.7	0.7	11.4	76.5		0.7	....	....	358
F	H-O Wheat Farina	The H-O Co., Buffalo, N. Y	14.6	10	11.0	5.6	0.4	12.3	80.6		1.1	....	....	382
F	Ideal Wheat X-Cel-O Flakes	National Cereal Co., Battle Creek, Mich	10.7	10	15.0	8.5	2.3	8.7	1.9	77.5	1.1	....	....	355
C	Imperial Granum	John Carle & Sons, New York	5.4	25	74.1	5.9	0.5	13.1	0.1	80.0	0.4	74.0	3.3	376
F	It	The Genesee Pure Food Co., Le Roy, N. Y	18.0	10	9.9	8.3	2.4	10.4	1.5	76.2	1.2	....	....	355
F	Jersey Flake	Jersey Cereal Food Co., Irwin, Pa	12.2	12.5	16.4	10.7	2.9	8.0	1.8	75.3	1.3	....	....	345
C	Jireh Whole Wheat Farina	Jireh Diabetic Food Co., New York	24.8	15	9.7	6.2	1.8	12.9	2.2	74.6	2.3	59.5	....	371
C	Jireh Whole Wheat Frumenty	Jireh Diabetic Food Co., New York	23.8	15	10.1	6.2	1.4	12.3	1.1	77.3	1.7	65.4	....	374
C	Manana	Health Food Co., New York	6.6	25	60.6	10.2	2.4	37.6	1.1	46.8	1.9	31.0	....	355
C	Mapl-Flake	Hygienic Food Co., Battle Creek, Mich	11.1	15	21.6	10.8	2.8	9.3	1.2	74.7	1.2	58.3	16.2	347
F	Most	Most Co., Pittsburg, Pa	14.3	10	11.2	8.2	1.1	12.3	0.3	77.7	0.4	....	....	364
F	Nichols Wheat Farina	Austin, Nichols & Co., New York	15.5	10	10.3	10.5	0.5	9.0	79.0		1.0	....	....	361
F	Nu-Life	Standard Food Co., Binghamton, N. Y	13.3	10	12.0	8.0	3.7	9.9	1.6	75.9	0.9	....	....	351
F	Orange Meat	The Orange Meat Co., Battle Creek, Mich	15.1	10	10.6	9.6	2.6	10.3	2.0	74.9	0.6	....	....	346
C	Pettijohn's Breakfast Food	American Cereal Co., Chicago	23.0	11	7.6	10.3	1.7	9.1	2.0	74.9	2.0	64.0	10.8	354
C	Power	Pillsbury-Washburn Flour Mills, Minneapolis	31.8	15	7.6	11.3	0.5	11.5	0.1	75.9	0.7	74.1	4.8	356
F	Pillsbury's Best Cereal	Pillsbury-Washburn Flour Mills, Minneapolis	31.8	15	7.6	8.7	1.0	12.7	76.6		1.0	....	....	366
F	Pillsbury's Vitos Wheat Food		12.0	10	13.3	7.9	2.8	10.9	1.6	76.2	0.6	....	....	354
C	Premier Farina	Francis H. Leggett Co., New York	15.6	10	10.3	14.1	0.5	11.1	0.1	73.3	0.9	71.0	8.3	346
F	Price's Wheat Flake Celery Food	Price Cereal Food Co., Chicago	12.6	12.5	15.9	7.1	2.2	10.1	1.9	77.1	1.6	....	....	363
C	Quaker Cracked Wheat	American Cereal Co., Chicago	29.9	15	8.0	11.7	1.7	9.3	1.7	73.3	2.3	63.6	9.4	351
F	Quaker Parched Farinose	Quaker Oats Co., Chicago	30.8	15	7.8	8.2	2.0	13.4	1.2	72.8	2.4	....	....	366
C	Quaker Wheat Berries	Quaker Oats Co., Chicago	7.2	10	22.5	10.0	1.4	13.8	1.3	71.6	1.9	52.7	26.5	359
F	Ralston Health Crisp	Ralston Purina Co., St. Louis	15.9	10	10.1	8.9	2.4	12.8	2.0	73.1	0.8	....	....	351
C	Ralston Health Food	Ralston Purina Co., St. Louis	29.2	15	8.2	12.4	1.4	11.9	1.1	71.5	1.7	64.4	7.9	349
C	Saxon Wheat Food	American Cereal Co., Chicago	25.4	15	9.4	9.8	0.8	12.8	0.5	74.4	1.7	69.6	5.0	364
C	Shredded Wheat Biscuit	The Shredded Wheat Co., Niagara Falls, N. Y	13.4	12	14.3	8.5	1.5	11.0	2.6	75.0	1.4	63.1	9.5	357
C	Street's Perfection Farina	S. H. Street, New Haven, Conn	16.0	10	10.0	13.1	0.5	10.3	0.1	74.9	1.1	71.1	6.3	351
C	Triscuit	The Natural Food Co., Niagara Falls, N. Y	13.0	10	12.3	10.3	1.7	11.0	1.7	73.9	1.4	60.8	10.1	352
F	Vigor	The H-O Co., Buffalo, N. Y	13.5	10	11.9	7.3	2.3	14.0	1.9	74.0	0.5	....	....	357
C	Wheatena	The Wheatena Co., New York	25.2	15	9.5	10.4	0.7	11.3	0.6	74.2	2.8	69.8	6.8	367
C	Wheatlet	The Franklin Mills, Lockport, N. Y	28.7	15	8.4	12.2	0.8	12.8	0.3	72.3	1.6	66.2	7.2	355
C	Zest	American Cereal Co., Chicago	11.5	9	12.5	10.7	2.6	9.0	1.2	75.3	1.2	60.1	35.3	348
	Mixed Grain Preparations.													
C	Brose Good Health Breakfast Food	The Kellogg Food Co., Battle Creek, Mich	18.1	5	13.3	10.1	2.6	14.4	3.1	65.5	4.3	....	....	358
F	Cero-Fruto	The Cero-Fruto Food Co., Battle Creek, Mich	15.5	0	10.3	8.5	3.0	10.2	1.8	75.3	1.2	....	....	353
F	Cera Nut Flakes	National Pure Food Co., Grand Rapids, Mich	....	10	....	8.8	3.1	13.4	1.8	71.4	1.5	....	29.0	353
C	Grape-Nuts	Postum Cereal Co., Battle Creek, Mich	16.5	12	11.5	10.3	1.9	11.5	1.5	74.2	0.6	36.3	39.2	348
C	Just's Diabetic Cereal Food	Just's Food Co., Syracuse, N. Y	9.6	45	75.0	6.3	0.4	0.8	0.0	92.4	0.1	2.6	88.4	374
C	Post Tavern Special	Postum Cereal Co., Battle Creek, Mich	28.7	15	8.4	9.9	0.9	10.9	0.5	76.9	1.1	69.3	....	361
C	Trix	The New England Cereal Co., South Norwalk, Conn	15.6	15	15.4	6.2	1.5	14.5	0.3	77.3	0.2	48.6	....	369
F	Voight Cream Flakes	Voight Cereal Food Co., Grand Rapids, Mich	14.6	15	16.4	8.6	1.8	10.6	2.1	75.5	1.4	....	26.4	357
	"Malted" Preparations.													
M	Brittle Bits	American Cereal Co., Chicago	16.8	13	12.5	6.9	1.5	14.1	1.0	76.0	0.5	....	....	365
F	Grandmother's Breakfast Grains	Great Atlantic & Pacific Tea Co., New York	16.0	10	10.0	6.9	1.1	13.6	0.6	77.1	0.7	....	45.4	369
F	Malta-Vita	Malta-Vita Pure Food Co., Battle Creek, Mich	18.4	15	13.0	8.1	2.1	8.9	1.7	78.1	1.1	....	16.3	358
M	Malt Barley Breakfast Food	Malted Cereal Co., Burlington, Vt	21.0	13	10.0	6.8	1.0	12.8	0.6	77.7	1.1	....	....	372
C	Malt Breakfast Food	Malted Cereal Co., Burlington, Vt	30.0	15	8.0	9.6	1.4	13.8	1.0	72.7	1.5	53.5	17.0	360
R	Malted Zwieback	Lambert Good Food Co., Battle Creek, Mich	16.0	15	15.0	9.2	1.7	14.7	1.3	71.5	1.6	60.3	13.7	359
M	Malt-Oats Breakfast Food	Malted Cereal Co., Burlington, Vt	21.8	13	9.6	6.4	1.8	16.7	0.9	68.8	5.4	....	....	391
R	Malt-Ola	Lansing Pure Food Co., Lansing, Mich	19.2	15	12.5	7.1	2.8	13.1	0.6	75.1	1.3	57.6	22.3	365
R	Malt-Too Flakes	Malt-Too Flake Food Co., Battle Creek, Mich	22.4	15	10.7	9.6	3.4	10.7	1.9	74.4	....	61.7	16.7	340
R	Malt Wheat Biscuit	Lambert Good Food Co., Battle Creek, Mich	18.6	15	12.9	8.5	1.7	12.7	0.4	76.3	0.4	47.2	31.9	360
R	Norka Malted Oats	Malted Food Co., Battle Creek, Mich	20.8	15	11.5	9.3	3.0	15.8	2.7	64.3	4.9	17.6	51.0	365
F	X-Cel-O Malted Wheat Food	Nation Cereal Co., Battle Creek, Mich	12.3	15	19.1	8.2	2.2	8.4	1.8	78.2	1.2	....	29.7	357

shows the average of the standard types and special brands, and it is useful for comparative purposes as well as for the preparation of dietaries.

NUTRITIVE VALUE.

In order that the relative composition of these foods may be shown more clearly, an abridged table, Table III, has been prepared, in which the average data for the different types are given, grouped under the two headings "to-be-cooked" and "ready-to-eat."

Among the foods requiring further cooking before use the gluten preparations are in a class by themselves. They contain from three to five times as much protein as the other uncooked breakfast foods, and only from one-half to two-thirds as much starch. As already stated, they are intended primarily for the dietary of the diabetic and are included here simply for the sake of completeness. Aside from their composition, their very high cost places them in an entirely different class from the ordinary cereal foods. The other six types may be compared directly. A glance at the table shows the superiority of the oat preparations from a nutritive standpoint. They contain from 50 to 100 percent more protein and from five to seventeen times as much fat as the other "to-be-cooked" products. In fact they are the only foods of this group that contain any important percentage of fat, and indeed for this reason they have been criticized as "heating" foods and undesirable for use in hot weather and with patients suffering from certain types of disease. It should be remembered, however, that an average serving of rolled oats is about 156 gms.—seven-eighths of which is water,—or an equivalent of 28 gms. of the uncooked oats. A daily consumption of this amount for four months would supply to the consumer only about the same amount of fat as is contained in one-half pound of butter. The "heating" effect of oatmeal preparations, therefore, may obviously be neglected except under most unusual conditions. If oatmeal supplies so little fat in the ordinary dietary, it is apparent that the amounts supplied by the other "to-be-cooked" cereals is almost negligible. This further emphasizes the fact that while these foods contain important percentages of protein, they are, with the exception of the oatmeals, essentially carbohydrate foods. The calculated calories, as given in the table, illustrate this point, and furthermore demonstrate the necessity of a consideration by the careful die-

TABLE III. AVERAGE COMPOSITION OF TYPICAL BREAKFAST FOODS.

Cereal.	Cost per lb., cts.	Water.	Ash.	Protein (N x 6.25).	Fiber.	Nitrogen-free extract.	Fat.	Unaltered starch.	Water-soluble material.	Calories per 100 gms. Total.	From protein.	From carbohydrates.	From fat.
To be cooked.													
Barley preparations	9.9	10.3	1.1	10.3	0.6	76.5	1.2	66.0	6.7	358	41	306	11
Hominy and samp	4.9	11.5	0.4	8.3	0.3	78.5	1.0	74.9	3.6	356	33	314	9
Corn meal	4.1	12.3	0.5	7 5	0.2	78.7	0.8	75.7	2.2	352	30	315	7
Oat preparations	6.4	10.3	1.8	15.9	1.0	64.4	6.6	57.8	7.5	381	64	258	59
Rice	5.0	12.4	0.5	7.5	0.4	78.8	0.4	....	....	349	30	315	4
Farina	9.4	11.6	0.5	10.9	0.1	76.0	0.9	71.7	6.5	356	44	304	8
Gluten preparations	36.5	8.9	1.3	39.0	0.5	49.0	1.3	37.5	....	364	156	196	12
Ready to serve.													
Flaked corn	13.3	10.8	1.8	6.9	0.2	80.0	0.3	60.9	26.1	350	27	320	3
Flaked rice	10.1	11.9	0.5	7.7	0.2	79.5	0.2	76.2	6.9	351	31	318	2
Puffed Rice	21.3	12.2	0.4	7 6	0.1	79.5	0.2	61.8	31.9	350	30	318	2
Flaked wheat	14.7	9.0	2.5	10 8	1.5	75.5	1.2	60.0	14.7	354	41	302	11
Puffed Wheat	22.5	10.0	1.4	13 8	1.3	71.6	1.9	52.7	26.5	359	55	287	17
Shredded Wheat	14.3	8 5	1.5	11.0	2.6	75.0	1.4	63.1	9.5	357	44	300	13
Triscuit	12.3	10.3	1.7	11.0	1.7	73.9	1.4	60.8	10.1	352	44	295	13
Zest	12.5	10.7	2.6	9.0	1.2	75.3	1.2	60.1	35.3	348	36	301	11
Rusk	23.8	11.0	1.3	12.1	0.1	70.4	5.1	55.8	16.6	376	48	282	46
Zwieback, wheat	....	9.5	1.7	9.9	0.6	75.7	2.6	....	....	366	40	303	23
Grape-Nuts	11.5	10.3	1.9	11.5	1.5	74.2	0.6	36.3	39.2	348	46	297	5
Just's Dietetic Cereal Food	75.0	6.3	0.4	0.8	0.0	92.4	0.1	2.6	88.4	374	3	370	1
Malt Breakfast Food	8.0	9.6	1.4	13 8	1.0	72.7	1.5	53.5	17.0	360	55	291	14
Malted Zwieback	15.0	9.2	1.7	14.7	1.3	71.5	1.6	60.3	13.7	359	59	286	14
Malt-Ola	12.5	7.1	2.8	13.1	0.6	75.1	1.3	57.6	22.3	365	53	300	12
Malted Wheat Biscuit	12.9	8.5	1.7	12.7	0.4	76.3	0.4	47.2	31.9	360	51	305	4
Norkas Malted Oats	11.5	9.3	3.0	15 8	2.7	64.3	4.9	17.6	51.0	365	63	257	45

titian of the source of the calorific value of the foods he employs. With the exception of the oatmeals, the six groups range from 349 to 358 calories per 100 gms., and the distribution of calories derived from protein, carbohydrates and fats is within relatively narrow limits. With oatmeal, however, with an average of only 25 calories per 100 gms. over farina, we have 45 percent more calories from protein, 638 percent more from fats and 15 percent less from carbohydrates. None of these foods contains an important amount of crude fiber, showing that the hulls and husks have been very largely removed, although oatmeal shows somewhat more than the other preparations. Oatmeal likewise contains the highest percentage of mineral ingredients. In none of the "to-be-cooked" preparations has any considerable part of the carbohydrates been rendered soluble, although here again oatmeal shows the highest percentage, probably because of the steaming it undergoes preliminary to the rolling process.

While among the "ready-to-eat" preparations considerable variations are noted in all the ingredients except the carbohydrates, the most striking differences are observed in the amounts of carbohydrates which have been rendered soluble in water by the various manufacturing processes. In some the malting or dextrinizing process has progressed to a considerable degree, while in others no more carbohydrate is soluble than in some of the uncooked preparations. In flaked rice, Shredded Wheat and Triscuit this deficiency is especially notable, as shown by the amount of starch present and the low percentage of water-soluble material. These data raise the important question as to the desirability of the extensive use in the dietaries of young children of foods containing such high percentages of unaltered starch. The flaked wheat preparations also show 60 percent of starch and only 14.7 percent of water extract. On the other hand flaked corn shows 26 and Puffed Rice and Puffed Wheat 31.9 and 26.5 percent, respectively, of material soluble in water. In Grape-Nuts the dextrinization process has gone further and 39.2 percent is soluble in water, but the presence of 36.3 percent of insoluble starch takes away much of the force of the manufacturer's statement that "the starch of the grains is largely transformed into grape sugar."

Among the "malted" foods we find that in but two instances has the malting process progressed very far. Practically all of Just's Dietetic Cereal Food, a purely carbohydrate food, is soluble in water. In Norka Malted Oats only 17.6 percent of insoluble starch remains and 51 percent of the food is water soluble. In the others only from 13 to 32 percent of water-soluble material is present, and in these, as already suggested, the soluble carbohydrates are probably due quite as much to dextrinization as to the action of malt.

DIGESTIBILITY.

The value of a food, however, depends not only upon the amounts of protein, fat and carbohydrate present, but also upon the digestibility of these nutrients, or in other words upon the thoroughness with which they are absorbed by the human organism. The following table, adapted mainly from data given in Farmers' Bulletin No. 249, United States Department of Agriculture, shows the relative digestible nutrients contained in the different types of cereal breakfast foods.

TABLE IV. DIGESTIBLE NUTRIENTS.

Cereal.	Protein.	Fat.	Carbohydrates.	Ash.
Rolled oats, steam-cooked	12.5	5.9	63.8	1.8
Flaked and malted oats	12.6	4.7	66.3	1.8
Cracked wheat	8.1	1.5	68.7	1.2
Rolled wheat, steam-cooked	8.5	1.6	70.7	1.1
Flaked wheat, ready-to-eat	7.8	1.1	69.0	1.2
Shredded Wheat	8.0	1.3	70.1	1.4
Farina	8.8	0.6	72.9	0.4
Flaked rye	7.8	1.3	71.1	1.3
Pearled barley	7.3	0.8	71.8	0.7
Corn meal	5.6	0.7	78.7	0.4
Hominy	6.2	0.8	78.0	0.3
Flaked corn	5.1	0.3	80.0	1.4
Rice, polished	6.3	0.4	73.3	0.4
Puffed Rice	6.2	0.2	77.9	0.3

Experiments made in this country with healthy men have shown that the highest coefficient of digestibility was obtained in the partially cooked rolled wheat products, and the lowest with the preparations made from unhulled wheat. Experiments conducted at the Maine Experiment Station with rolled oats, rolled wheat, corn meal, hominy and certain brands of specially prepared breakfast foods, showed that in general about 90 percent of the organic matter was digested when the cereals were eaten in a mixed diet containing bread and meat and in a simple diet of cereal, sugar and cream, and also when the results were computed for the breakfast food alone. The general conclusion from these experiments was that rolled wheat showed the highest coefficient of digestibility and the corn products the lowest, oats occupying an intermediate position. When the actual nutrients are compared with the total nutrients it is seen that the relation previously noted still maintains, that is, the oat preparations provide the largest amounts of digestible protein and fat, followed by wheat, rye and barley, while the corn and rice products supply but relatively

small amounts of these elements and relatively large amounts of carbohydrates. Other experiments of the Maine Station bring out another interesting point, already noted by several observers, namely, that the processes to which certain products have been subjected during their manufacture, while converting a part of the starch into more soluble carbohydrates, have at the same time diminished the digestibility of the protein. For instance, rolled wheat showed 85 percent digestible protein, while Force and Grape-Nuts showed but 76.2 and Shredded Wheat only 57.7 percent. These and other experiments show that the raw cereals, if sufficiently cooked, are as quickly and as easily digested as the best malted cereals, and more quickly than the ordinary prepared cereals and a large majority of the so-called "malted" cereals. It is evident from these data that the dietitian must not take too seriously the claims of the average cereal food manufacturer as to the superior digestibility of his particular product.

"PREDIGESTED" AND "MALTED" FOODS.

Some reference has already been made to the incompleteness of the malting process evidenced by most of the so-called "malted" foods. These foods are commonly offered with claims either that they are of superior digestibility or that a portion of the food is already "predigested." The use of this latter term has been greatly abused. As Frear well says, "It is misleading to say of a food that has been slightly dextrinized in the process of roasting, that it is *predigested*, because the process of digestion has not been employed, and the chemical changes wrought in the food are only in a rough sense comparable to those effected by the soluble ferments." Furthermore, the dextrin produced by the exposure of starch to the temperature of the bake oven, while soluble in water like grape sugar and maltose, is so dissimilar to these simpler bodies in its general properties, that it should more properly be classed, physiologically speaking, with starch than with grape sugar and maltose.

It is doubtless true that certain of these "predigested" foods may have a legitimate use in the feeding of the sick, but even in such cases they should be used only under the physician's supervision. The modern breakfast food, however, is widely advertised for the use both of the sick and the general public. It is indeed a questionable advantage to a healthy man to have his food artificially digested. "If the digestive organs are out of order it may be well to save them work, but troubles of digestion are often very complicated affairs and the average person rarely has the knowledge needed to prescribe for himself. In general, those who are well should do their own work of digestion and those who are ill should consult a competent physician."

THE COOKING OF BREAKFAST FOODS.

The proper cooking of any food is a very important factor in its digestibility. Aside from the usefulness of heat in sterilizing food, the main purposes of cooking are to improve the food's appearance and flavor, and to break down certain refractory elements and to convert the nutrients into more assimilable forms, thereby increasing the food's digestibility.

The manufacturing processes to which the cereals are subjected in the production of breakfast foods—crushing, rolling, steaming, parching, puffing, or shredding—all to a greater or less degree rupture many of the cell walls of the grain, and thus render the cell contents more susceptible to the action of the digestive juices of the body. As a rule, however, as has already been shown, even some of the "ready-to-eat" foods come to us in a form which requires more cooking before their nutrients can become entirely available to the body. In the average home the over-cooking of cereals is most unusual; on the other hand under-cooking is all too common. This tendency is fostered by the claims of the breakfast food label, and we have offered to us "fifteen-minute" oat flakes and similar alluring and alleged time-conserving preparations. The consumer has no way of knowing how much of the needed cooking has been performed by the manufacturer, and he may safely assume that the directions accompanying the food underestimate rather than exaggerate the time necessary for the food's preparation. Frequently the prepared breakfast foods are condemned as indigestible simply because the cooking period has been too limited; but theoretically there is no reason why, if properly cooked, they should not be quite as digestible as cereals cooked entirely in the home. No hard and fast rule can be laid down as to the proper cooking period for the various cereals, but, generally speaking, the greater the amount of the husk or hull present the longer the food should be cooked. Whole grains, therefore, require more cooking than the rolled or crushed preparations.

In the use of breakfast foods and in a comparison of their relative nutritive value, the moisture content of the food as eaten must not be overlooked. Our tables clearly show that, pound for pound, rolled oats supplies more actual nutriment and more calories than any of the ordinary breakfast foods. But rolled oats is never served in the dry form, and when properly prepared contains about 84 percent of moisture, instead of the 10

percent found in the uncooked cereal. Thus 28 gms. of oatmeal would be sufficient to yield the 156 gms. of the cooked product as placed on the table. Hominy absorbs 79 percent of water in cooking and rice only 72 percent. With the "ready-to-eat" cereals, in spite of their usual bulk, it is quite possible that the ordinary helping may contain more actual nutriment than the amount of cooked cereal generally served. This would doubtless be true for protein and carbohydrates, but to secure the same amount of fat contained in 28 gms. of dry oatmeal, 185 gms. of hominy, 462 of rice, 616 of flaked corn, 154 of flaked wheat, 924 of Puffed Rice and 308 gms. of Grape-Nuts, would be needed. Breakfast foods, of course, are never eaten in this wholesale way.

COST.

An inspection of Table II will show the extremely wide range in the cost per pound of these foods. Omitting the gluten preparations, Imperial Granum and Just's Dietetic Cereal Food, intended primarily for sick-room use, the cost per pound ranges from 3.1 to 46.2 cents. Of the preparations requiring cooking, the corn products are the cheapest, followed by rice and oats, with barley and wheat products the most expensive. The specially prepared foods, on the average, cost from two to three times as much per pound as simple cereal preparations such as oatmeal, farina and hominy. In a consideration of cost, however, composition must not be overlooked, and judged on this basis oatmeal is by far the cheapest of all the cereal breakfast foods. Nor must we forget that while we pay from two to three times as much for the prepared as for the uncooked foods, this price is in part justified by their convenience, and the saving in both time and fuel by the shortening of the home cooking period. In hotels, hospitals and large establishments where a fire is kept throughout the day for other purposes, the prolonged cooking required by the raw cereal may be effected with practically no expense. In households where a gas stove is used exclusively for cooking, and then only at specified and limited times, it is indeed a question whether the "ready-to-eat" brands may not in many cases be the more economical purchase.

ADULTERATION AND MISBRANDING.

Cereal breakfast foods are and always have been remarkably free from adulteration, and stand in the very first rank of American food products as regards soundness of the raw material used, cleanliness in methods of manufacturer, and general attractiveness of the finished product. On the other hand the manufacturers, even of some of the best known and most widely used brands, frequently make wild and extravagant claims for the nutriment value of their products, their digestibility and their "curative" powers. When special virtues are claimed for a breakfast cereal and it is offered as a "nerve food" or a "brain food," or when it is advertised as a specific for sixty-eight diseases, ranging from loose teeth to infantile paralysis, it passes from the category of honest, legitimate foods into the limbo of "patent" medicines, and brings dishonor on a class of foods of generally unimpeachable reputation.

New York Societies Launch Sight-Saving Movement

A campaign to prevent unnecessary blindness was started January 19 at the Lighthouse for the Blind, 111 East Fifty-ninth street, New York City, when the first of a series of "sight-saving" lectures was delivered by Dr. Walter B. Weidler, ophthalmologist of the Manhattan Eye and Ear Hospital. The lectures have been arranged by the New York Association for the Blind in collaboration with the American Medical Association, the Illuminating Engineering Society and the Board of Education. They are open to the public and are intended not only for the blind and those who are in danger of losing their sight, but for all who wish to inform themselves on the proper care of the eye.

A sight-saving service committee, organized to assist in the work, is composed of Dr. Ellice M. Alger, Professor of diseases of the eye in the Post-Graduate Hospital; President Thomas W. Churchill, of the Board of Education; Health Commissioner S. S. Goldwater; Dr. Ward A. Holden, ophthalmologist of the College of Physicians and Surgeons; Miss Winifred Holt, secretary of the New York Association for the Blind; Dr. Henry M. Leipziger, supervisor of the lecture bureau of the Board of Education; President George McAneny, of the Board of Aldermen; Arthur Williams, president of the Museum of Safety; and Dr. Talcott Williams, director of the Columbia School of Journalism.

With reference to the movement Miss Winifred Holt, secretary of the New York Association for the Blind, expresses herself as follows:

"Eight years' experience has taught us that the ranks of the blind could be greatly reduced by convincing the public of the need of proper hygiene, proper economic conditions, good lighting, fresh air, and exercise. The campaign about to start is in a sense an outgrowth of the clinic which we established at the Lighthouse a year ago. Blind people of all ages are here treated by experts, and the benefits already derived have been remarkable. In one instance the association was instrumental in finally curing five cases of blindness.

"The efforts of the Health Department in checking infant ophthalmia are encouraging, but the campaign should go still further. The sight of school children requires much care, and the cooperation of the Board of Education with the Lighthouse clinic has already been the means of restoring the sight of several boys and girls who had been given up as hopeless. We have more than one ex-blind man who is now earning his bread as a sighted person, and I could show you bright-eyed children, who came to us blind, now acting as sighted companions to other youngsters less fortunate."

The campaign will be extended to other cities.

Plans have been drawn for a $40,000 nurses' home to be erected at the Methodist Hospital, Des Moines, Iowa. The building is to be a four-story and basement fireproof structure, 80 x 70, with accommodations for 130 nurses.

THE NEW BETHESDA MATERNITY HOSPITAL IN CINCINNATI[1]

New Building Developed and Built as the Result of Operation of an Older Structure—Special Needs of Obstetrics Incorporated in the Architecture—Criticisms and Suggestions of a member of the Staff

By REV. C. GOLDER, Ph. D., President, and WILLIAM GILLESPIE, M. D., Member of Staff

THE Maternity department of Bethesda Hospital was established in 1902. Owing to its limited space, the need of a larger and modern equipped building has long been felt. In 1912, the architect, Mr. Gustave Drach, made plans, and in January of 1914 the new building was ready for occupancy. It has room for sixty-five beds, and 1,500 patients can be accommodated annually. This is equal to about one-fifth of the number of births yearly in greater Cincinnati. The building is fireproof and modern in every particular. The foundation is of stone and the enclosing walls are of Bedford stone up to the first story, colonial brick above, with a beautiful terra-cotta cornice above the fifth story. The stairways are constructed wholly of non-combustible material, and are enclosed in fireproof walls with self-closing metal doors at each floor. The elevator is enclosed in a fireproof shaft with solid metal doors, and is thoroughly protected against fire. There is no open communication between floors anywhere in the building. The floors and bases are of cement and mosaic. The doors leading into the corridors are four feet wide. The beautiful and spacious wing, called the utility wing, is separated from the main building by metal doors on each floor. This wing contains the elevator, diet kitchen, and clean-up room, and on every floor a nursery; also a linen room, the sterilizing room, two delivery rooms, and a doctor's room.

The architect has succeeded in getting away from the usual hospital effect, and in creating in the building the general appearance of a high-class hotel. The systems of communication, calls and signals are complete. The call by which the patient summons the nurse consists of a push button, which lights a small lamp above the door in the corridor, also a pilot lamp at the annunciator in the nurses' room, which indicates the number of the room. The signals remain lighted until the nurse goes to the room of the patient and there pushes another button which puts out all lamps connected with that room. A vacuum cleaning plant has been installed in the basement, with pipes leading to openings for hose connections at convenient places on each floor. The heating of the building is by direct radiation, all incoming air having been warmed to room temperature. The radiators are elevated to facilitate cleaning under them. They are all under automatic control, which insures a variation of less

Bethesda Maternity Hospital.

Delivery room, Bethesda Maternity Hospital.

[1]After Dr. Golder had prepared his paper, the editor asked for a note of criticism on the architectural result, to which request Dr. Gillespie has kindly responded. His suggestions must be of great value to those contemplating the building of a maternity hospital.—Ed.

than two degrees from the point for which the thermostat is set. Any room may be kept at any temperature desired. The general scheme of ventilating is as follows: the air passes through tempering radiators, then through an air washer, and is raised to seventy degrees. It is then driven by large fans through conduits to the different apartments. By means of another large fan in the attic the air is ejected through the ventilator heads in the roof. By this process the air is constantly circulating in the building, and changes eight times every hour. The operating rooms are ventilated and heated by the same system. Both operating rooms are exceptionally well lighted and are equipped with swinging chandeliers. The sterilizing room is located between the two operating rooms with doors opening into each. The equipment of this room is complete. Next to the operating room is the surgeons' dressing room, provided with lavatories, shower bath, lockers, etc. The roof garden can be reached by adequate elevator service. The view from this elevation is superb, and convalescents find pleasant recreation there.

In furnishing the building, neither time nor money was spared in an effort to secure the furniture best adapted to the purpose. Simplicity and durability has been our aim throughout. The building is modern in every particular, and with equipment it cost $125,000.

CRITICISM OF PLANS BY DR. GILLESPIE

In criticism of the plans of the Bethesda Maternity Hospital there are several things which could be suggested as improvements. At least one door should give access to the elevator so that the patient will not have to be taken up or down steps. In a maternity hospital this is of less importance than in an institution where all classes of patients are admitted, but even a hospital devoted entirely to obstetrical patients occasionally receives helpless cases.

It is a question whether it pays in a maternity hospital to have many rooms with private baths. A patient seldom wishes to pay for a private bath at a time when she cannot make use of it. It may be well to have a few such rooms, but their number should be limited.

In this age when it is difficult to get and train a sufficient number of competent young women, the question of help is of supreme importance, and anything tending to save labor should be carefully considered. I should therefore strongly advise that some simple means of consuming soiled dressings be installed on each floor rather than that they should be collected for future burning. This would be particularly valuable in infected cases, so that none but the nurse in charge should touch the infected dressings.

The general construction of the hospital is quite satisfactory. Its soundproof construction is a marked success. When a patient's door is closed she hears nothing; many insist upon their doors being left ajar, to prevent loneliness. This is in pleasant contrast to the usual complaints after a particularly noisy patient has been delivered.

The equipment of delivery rooms must vary according to the ideas and whims of the individual operators, but their number should be sufficient to insure one being always available. When the Bethesda Maternity is run at full capacity it will probably be necessary to have an emergency delivery room upon each floor in addition to those shown in the plans.

The ventilating system is a great success and the building as a whole is quite satisfactory.

New York City Builds New Hospital at Jamaica

The first building of a hospital group to be erected at Jamaica, L. I., for the New York City Department of Health is in course of construction. It is to be a three-story structure of the modified Spanish mission style of architecture. The walls are to be of hollow tile blocks with stucco finish, and the roof of red Spanish tile. The length of the building, including porches at either end, will be 180 feet, and the extreme width 60 feet. The width through the wards proper will be 30 feet. A large area of window space is to be provided.

The central portion of the building will be used for the administration and service of the hospital. On the first floor there will be a doctor's room, dining room, large observation room, diet kitchen, two nurses' rooms and baths. The north wing of the first floor will be divided into three small separate wards, with entrances to porches on each side. The south wing of the first floor will be provided with an admission and examination room, entirely separate from each other and the other portions of the building. The second story will contain a large convalescents' room, nurses' room, two quiet rooms and a diet kitchen. The third floor in the central part will have four dormitory rooms for the helpers.

The entire group is to comprise twenty buildings, consisting of twelve ward buildings similar to the one here described, an administration building, two dormitory buildings, kitchen, laundry, morgue, boiler house, stable and garage. The main idea in developing the general plan and design was to get away from the formal institutional effect and make the place as homelike as possible.

The Alameda County Hospital at San Leandro, near Oakland, Cal., has opened a training school for nurses, which the superintendent, Dr. C. A. Wills hopes to make the greatest institution of the kind on the Pacific coast. Miss Hester Thomas, formerly head nurse of the Episcopal Hospital in Philadelphia, is in charge of the school. Nurses in training will receive $8 to $10 a month in addition to all necessities and will not be required to work more than eight hours a day. A scarcity of good nurses is given as the reason for establishing the school and for the liberal inducements offered. In order to be admitted applicants must be in perfect health, physically able to perform the work expected of them, and must have done at least a year's high school work or its equivalent.

THE NORWOOD CIVIC ASSOCIATION HEALTH CENTER

A Helpful Cooperative Institution for the Small Town—How It Relieves the Needy Sick Without Pauperizing—Visiting Nursing Service—Maternity Cases

By ELIZABETH ROSS, R. N., Norwood, Mass.,
Supervisor of the Corner House of the Norwood Civic Association

THE purpose of this article is to give some idea of the aim and character of the work which the Health Center of the Norwood Civic Association is trying to inaugurate and work out. And in order to do this it is necessary to give some description of the conditions which exist in the town of Norwood; for every town has a different problem, according to its local characteristics.

Norwood is an industrial town of over nine thousand inhabitants, fifteen miles south of Boston. Its industries are, chiefly, tanneries and printing plants, while in the next town are large paper mills, which employ as many men living in Norwood as do the industries of Norwood itself. The people are divided into two distinct groups. The first group is composed of American workingmen of the middle class, self-respecting, industrious, but somewhat improvident, living up to a high city standard. The other group is made up of newly arrived immigrants of every nationality, struggling to get a footing in this new country. Between these two groups there is no connecting link. They are as far apart as though they lived with the sea between them, except when commercial interests bring them in contact with one another.

Our Health Center, as a part of the civic work, is planned to meet the needs of this particular town. We plan so to centralize all work that pertains to the care of the sick that the Center will control the standard as well as the cost. This is to be done by supervising all care of the sick in the homes and by ascertaining that no phase of the work is accentuated at the expense of the other. Statistics pertaining to the cost of caring for the sick have awakened us to the fact that a great deal of money is spent in hospital and charity nursing, and yet only about twenty per cent of the cases of sickness receive any scientific nursing care, while the other eighty per cent get on as best they may. This eighty per cent of cases occurs among the middle class wage earners who need every penny of their money to live and who are not and should not be paupers. The late Professor Norton of Harvard once said that it took just three days of privation to make a savage of a cultivated man. I am sure that people who have had experience will agree that it takes about three *hours* to make a pauper if only one goes at it the right way. One of the most important tasks of a Center like ours is to give to the people what they need and yet avoid such disaster. Our ability to ascertain the facts about every family in the town makes it nearly possible to do this. With school nurse, school visitor, the visiting nurses, our follow-up visitor and investigator, our close cooperation with all of the industrial plants and churches, there is no channel of information that is not open to us. We can, if we wish, learn the income and get a reasonable idea of the output of every family from one end of the town to the other.

We had a case a short time ago which seemed likely to end in tragedy. The family consisted of a man and his wife and baby. The woman was taken sick when the baby was a month old, and as the man had no work at the time he undertook the position of nurse and housekeeper, with the district nurse coming in twice a day. All went well until the mother lost her milk and the baby cried most of the time. At the end of a week the mother was still in a bad condition and the man was so desperate that he was ready to throw himself into the river. What was to be done? The nurse had kept the supervisor in touch with the case from the beginning, so that when she came in with the report that something *must* be done, it was not hard to decide what to do. The baby was taken to a good woman who was glad to earn a little money to help her daughter, who was the breadwinner of her family, and for a reasonable sum she cared for the baby for two weeks. The father during this time had a chance to get hold of himself and the mother had a chance to sleep, which for her meant recovery. At the end of the two weeks the baby was taken back to its mother, who was by that time able to care for it. The whole cost of this two weeks' care was ten dollars, whereas, if the woman had been sent to the hospital, the baby would still have had to be cared for, which would have trebled the cost besides breaking up the home.

This small case shows how much can be accomplished when it is possible to have an intimate knowledge of conditions. The father and mother knew that the work was being done through the Corner House, whose workers they knew and trusted. This example is cited to show how the Center protects the home by providing a central establishment, with the right sort of people in it, upon whom the members of a home can call and

confidently expect help in the hour of need. It also shows how the Center is able, by its affiliation with the work of the district nurses, to give valuable assistance. Think, moreover, what an advantage it is to the visiting nurse to know that what she is doing can be supplemented if necessary, and how much more effectively she can carry on her work under such conditions.

When sickness comes to any home it has a disorganizing effect, and often, in the home where there is a small income and many demands, the whole machinery breaks down. What is needed? Every case has its own needs and they are not alike. Doctors and neighbors may do their best, but their work is but a makeshift, and if the patient is a mother, how much good will medicine do if she knows that her children are uncared for and unhappy? Often the need of someone to keep the home together is far greater than skillful medical care or nursing. In such cases the type of worker that is needed must be found for the price that the family can afford to pay. She ought to be a woman who has been tried and found worthy, whether she be a woman working for a dollar a day or a highly trained worker earning a large salary. To meet these varied needs, does it not seem obvious that a nursing center with resources of all kinds at its command, and a supervisor whose business it is to know how to make use of these resources, is the reasonable solution of the problem?

The hospital problem in a small town is important, and all towns should have some place where accidents and minor operations can be properly cared for, but it is bad finance to carry on an expensive institution which cares for only ten percent of the sick, leaving the other ninety percent uncared for. When a town has a hospital—say of thirty beds—which is not generously endowed, the task of meeting the deficit leaves nothing for the many outside needs. In a town which is as near to a large city as is ours, the cases needing special care should be taken to the large hospitals, because of the specialists who give themselves to the work there. No small, out-of-town hospital can expect to have at its command men trained for special work; and the general practitioner cannot, and, if he is a conscientious man, will not, undertake special work. This means that in order to do good work a certain percent of the cases should be taken to the city; in this way the town hospital may be small and inexpensively conducted.

Our hospital has but five beds and is a part of the nursing center. Since its opening, six months ago, it has cared for sixty-five patients. It is carried on with a graduate nurse, assisted at times by the supervisor, and an attendant for night duty. The hospital nurse often goes out into the town when the two visiting nurses need help. It is as if the whole town were our hospital ward and all the nurses were on duty together.

The town records for three months show that out of one hundred and fifteen maternity cases only eighteen were not attended by our nurses. In every case a nurse went with the doctor and attended the delivery, the same nurse making subsequent visits, even when an attendant or a practical nurse had been placed in charge of the case to care for the family or patient or both. In maternity cases our nurses respond to every call for a nurse to attend the delivery, whether it is a normal or an instrument case, for we hold that only in this way can good work be done. The latest New York survey shows ninety-two percent of all births are home cases. Surely this ninety-two percent need the care of a nurse as much as the eight percent of hospital cases.

Fig. 1.

Our visiting nursing is conducted on a somewhat different scale than is most of the work of its kind in other towns. We have no sliding scale of prices. The work is done on a twenty-five-cents-a-visit basis, with a dollar for attendance at delivery in maternity cases and a dollar for administering ether. We find this a very satisfactory system, the work earning for itself more than half the cost of the nursing service. A standard price has a better effect upon those who make use of the nurse, as in every case the patient pays the full price or accepts charity.

All of our clinical work is carried on in cooperation with the school department. Children are dismissed from school to keep their appointments

with either the dental or the eye clinic. The school nurse sends the cases to the clinic, with a signed card which entitles the child to treatment. Cards signed by doctors or any of the Corner House nurses are also accepted by the clinics. The scale of prices is printed on the back of the admission card.

The accompanying diagram, Fig. 1, will show much better and more briefly than would many pages of explanation the method of carrying on the work of the Health Center. It is to be read in this fashion: The Corner House of the Norwood Civic Association is the center or the hub, and it aims to care for the health of the individual, the home, and the town, three in one and one in three —a complete circle. Radiating from the center are the spokes, each necessary to the strength of the wheel, and each in its special way benefiting the individual, the home, and the town. The outer rim of the wheel stands for cooperation. The progress made depends upon how well the different organizations cooperate. Our ideal will be realized when the cooperation is perfect, when all the organizations named on the rim are in perfect touch with the Corner House—the center.

The value of such a center which can so control and supervise the methods of caring for the health of a community cannot be overestimated.

THE MANUFACTURE OF NITROUS OXIDE FOR ANESTHESIA IN HOSPITALS

Some of the Difficulties in Gas-Oxygen Anesthesia – Cause of Cyanosis and Its Elimination—The Poisons in Impure Gas—Refinements in Its Manufacture—The New Installation

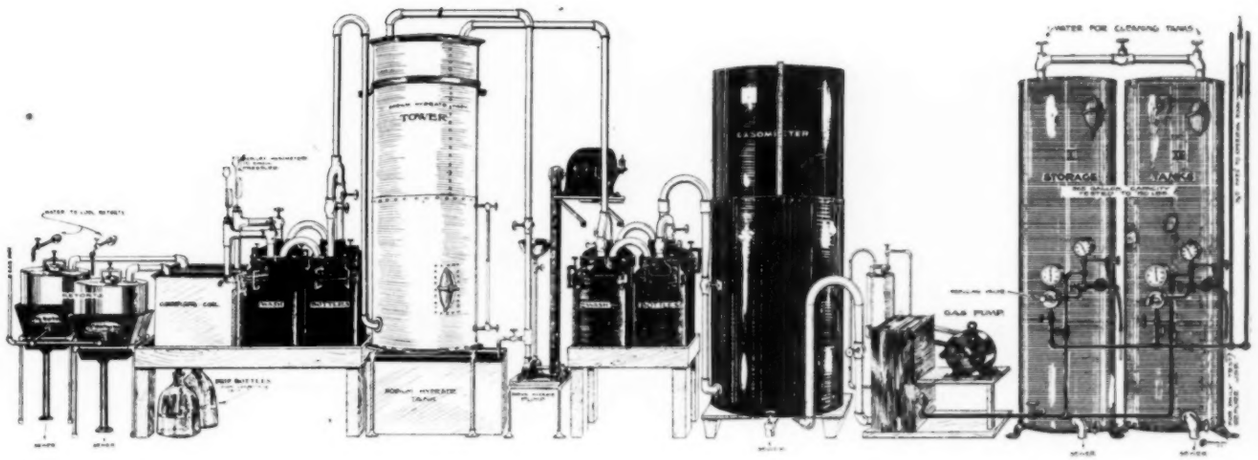
By A. R. WARNER, M. D., Superintendent Lakeside Hospital, Cleveland, Ohio

THERE are now evidences that the use of nitrous oxide-oxygen anesthesia will become more general than it has been, and we are hearing of other hospitals who are considering the installation of apparatus, as we have done at Lakeside, to manufacture the gas. It may therefore be timely and perhaps helpful to publish the story of its manufacture and use at Lakeside, in part as a warning against pitfalls and in part as evidence that success in manufacture can be attained.

At Lakeside Hospital nitrous oxide gas has been used for anesthesia extensively for about eight years and has been manufactured in the hospital as part of the routine for more than five years; and for this length of time nitrous oxide-oxygen has been the anesthetic of choice. Our experience, therefore, has amounted to the use of approximately 500,000 gallons in about 2,700 operations yearly.

For the first four years our gas was not entirely satisfactory, and at times not without harmful effects. This was overlooked at first, partly because on the whole we had as good results as others, and partly because it was still believed that cyanosis was necessarily present during nitrous oxide-oxygen anesthesia. As our pioneer anesthetist, Miss Hodgins, developed more skill with this anesthetic she was able to demonstrate to us that the cyanosis, and the irritation and the symptoms of toxemia following anesthesia, were present to a greater or less extent in all or several patients on the same day, and on other days were completely absent; and she convinced us that the gas contained a variable amount of some poison. Commercial gas, although not without these effects, seemed more uniform, and distinctly less irritating. This difference seemed fairly constant, although our plant and methods of manufacture were the same as the commercial plants known to us. On our worst day one patient of the gynecological service died, with all the symptoms of a severe toxemia, a few hours after a simple operation; one patient of the surgical service was severely poisoned, and three others suffered to a lesser extent. The predominating symptom was a cyanosis that no amount of oxygen could dispel. It seemed certain that the hemoglobin had been damaged, and our surgeons learned that out-of-door fresh-air treatment was most effective. The condition, with the exception of the color, resembled carbon monoxide poisoning, but unfortunately no spectroscopic examinations of the blood of these patients were made.

At last, about two years ago, it became evident to all that nitrous oxide must be obtained in greater purity or its use in the hospital abandoned. On the good days this anesthesia was so satisfactory and so easy for the patient that it seemed best to make every effort to make it right. The best consulting chemists obtainable were called to examine the plant and methods. Each pointed out possible defects and all agreed that better apparatus and methods could probably be developed by experiment. Each called attention to the great number of possible impurities. One of our trustees, Mr. H. M. Hanna, then offered to



Plan of apparatus installed in Lakeside Hospital for the manufacture of nitrous oxide.

provide the funds necessary to run an experimental plant at the hospital, and the writer undertook to solve in such a plant two problems:

First—To find a method for the manufacture of nitrous oxide of sufficient purity to be without poisonous effect.

Second—To devise apparatus by which this can be done in a routine way in hospitals under hospital conditions.

The details of the many experiments with chemical processes and types of apparatus need not be presented. The net result of the first six months' work was merely that we obtained more uniform gas, and we did not have the very bad days. About this time we found that nitric oxide, even when present in large amounts, was entirely removed from the nitrous oxide by confinement in iron tanks over night. This explained the lesser irritation from commercial gas, which is always shipped in iron cylinders. Commercial gas had always been free from nitric oxide, while our gas, which was sometimes used without standing long in the tanks, had not been free from it. In these experiments we became convinced that the poisonous effects were, at times at least, not from the nitric oxide, which has been the generally dreaded impurity.

The impurities theoretically possible to produce in the destructive distillation of even a pure ammonium nitrate in an iron or other reducing retort are many: among them are free ammonia and many of the more highly organized, well known hemoglobin poisons, such as the hydrazines, hydroxylamines, and others. It seemed possible that these were causing the trouble. Our gas and the best samples of commercial gas obtainable were found slightly alkaline to phenolthalein. Published analysis of commercial nitrous oxide had reported the presence of ammonia and nitrogen. This certified to the presence of ammonia, or of substances breaking down to ammonia. A thorough washing with strong sulphuric acid was then added as another step in the process of purification. On this day—now over a year ago—our gas became absolutely neutral in reaction, and the peculiar cyanosis disappeared from our operating rooms, never again to appear when acid-washed gas was used. We have, however, seen it each time that the installation of new apparatus in the plant made it necessary for us to shut down and for a few days use commercial gas *not* scrubbed with acid.

As a further result of our experiments, it may be mentioned that our plant has been changed from the conventional commercial plant in the following essential particulars:

1. The use of a retort material less liable to attack by the vaporized ammonium nitrate. The iron retorts were corroded through in about six weeks. The best material yet found, having the required strength, is a 95 percent aluminum compound. (In this retort ammonium nitrate is heated, forming, theoretically, pure nitrous oxide and water, but, practically, a mixture of many nitrogenous compounds.)

2. The use of larger outlets for the retorts, fitted with packing joints connecting directly with larger caliber piping; thereby removing 60 percent of the back pressure and lowering the boiling temperature.

3. Discontinuation of the use of glass tubing entirely, because it was too easily broken.

4. The practice of cooling the gas immediately to about 10°C., to remove the water (45 percent by weight), and to catch and recombine the greater part of the dissociation products of the distillation.

5. Oxidization of nitric oxide to nitric acid, which is removed by the scrubbing with sodium hydrate (10 percent solution) which follows.

6. The scrubbing with sulphuric acid (20 per-cent) mentioned above, which follows the scrubbing with sodium nitrate.

7. The insertion of mercury monometers after each process to act as a signal to indicate any obstruction, leak, or unusual condition, and to give (by comparison) enough evidence of rate of gas flow to be a satisfactory indicator for practical purposes.

8. We have also developed more satisfactory models for several parts of a plant of hospital size, some of which are along new lines.

Laboratory experiments by Dr. H. G. Haskins, Associate Professor of Organic Chemistry and Biochemistry in Western Reserve University Medical College, has confirmed the following points:

1. The advantage of non-corroding retorts, which reduce and disintegrate less of the ammonium nitrate.

2. The advantage of distillation under lower pressure and temperature, in that it causes less dissociation.

3. The effectiveness of the cooling of the gas to remove the water and to recombine promptly the dissociation products. This large bulk of water catches a large proportion of the impurities too much changed to recombine.

4. The importance of the scrubbing with sulphuric acid to remove the free ammonia and other alkaline substances (as hydrazines and hydroxylamines) possibly present. The only alkaline substance identified, however, was ammonium. Without the acid washing the gas would contain alkaline substances organic in nature.

The existence of the more highly organized and more poisonous alkaline impurities has not as yet been demonstrated in samples tested, and animal work to determine whether free ammonia itself when inhaled in anesthesia can produce the effects noted, has not been done. The use of gas from our plant for a year, absolutely without ill effects, has lessened local interest in troubles from impurities. It is in a way unfortunate that these troubles were ended so promptly by practical methods before they were scientifically investigated. We hope the practical result will some day be fully explained.

To our minds the first problem has been solved: nitrous oxide can be manufactured in sufficient purity to be absolutely safe for use in anesthesia. We are not quite sure about the second problem. Unstinted funds for experimenting with apparatus have enabled us to develop a plant by which Lakeside can manufacture such a gas in routine and safely, but the walls and ceiling of our room still bear marks made by the pieces of bursted retorts and our employees have not forgotten the fumes which repeatedly filled the entire hospital "from the gas plant." It is never entirely safe to place a pot containing a nitrogenous and an oxidizing substance over a fire. Many defects in the models of apparatus and troubles in handling of the purification have been overcome and non-essentials have been eliminated, so that it would now seem to us reasonable to expect any good chief engineer to supervise the plant and train a helper to run it; yet that remains to be demonstrated.

ADVANTAGES FROM THE PLANT.

The advantages derived from owning and operating such a plant may be summed up as follows:

1. There are no tanks in the operating room to explode, get in the way, or freeze up in the middle of an administration of the anesthetic.

2. Gas manufactured each day is compressed to 100 to 150 pounds pressure in iron tanks of 350-gallon capacity, and allowed to stand over night before use. From these tanks pipes lead to the operating rooms and a reducing valve regulates the pressure in these pipes accurately. The anesthetist is therefore assured of any volume of gas at uniform pressure (three pounds is used at Lakeside), and at room temperature, which obviates the annoyance from the freezing of gas from cylinders, and the irritation to the patient from the very cold gas inhaled, and insures an absolutely uniform rate of flow at any and all times from the same machine with the controlling valve set at a given point.

3. It is possible to use machines adapted to low pressure. The dropping of the pressure in our pipes from thirty to five pounds and adapting the machines to this pressure reduced the average consumption of nitrous oxide thirty percent, made the breathing distinctly easier for the patient and the anesthetic decidedly more satisfactory. We have since lowered the pressure to three pounds with still more improvement in the anesthesia and further saving of gas. For October, November and December, 1913, our average consumption of nitrous oxide per hour of anesthesia given was 444.3 gallons; for the same months of 1914 the figure was 151 gallons.

These same advantages can be secured without actually manufacturing the gas, by installing the same system of tanks, pipes and reducing valves and purchasing the gas in the largest cylinders available. The cylinders purchased are filled to high pressures (1,500 pounds, often liquefied) and will discharge 97 percent of their charge into tanks at 100 pounds pressure; therefore this arrangement is much more satisfactory and economical than attaching either small or large cylinders directly to the machines for administering the gas.

We do not manufacture oxygen gas; we purchase it in large cylinders at 2,000 pounds pressure and it is discharged into tanks through reducing valves at 100 to 200 pounds and sent to the operating room, in pipes parallel to the nitrous oxide pipes, at three pounds pressure, regulated by a second reducing valve. The third reducing valve on the machine for giving the gas reduces to practically atmospheric pressure. Several types of portable systems of decompressing tanks (automatic) or gasometers (hand-regulated) have been devised to secure the same results; but all such are necessarily large and cumbersome, have no advantages and take up valuable space in the operating room.

4. A large element in the cost of commercial gas is in the compression of it to high pressures for shipment. It can therefore be manufactured in small plants at about 60 percent of the cost of purchase. We have decided that this is a more satisfactory way to report cost than by our actual figures. The variation in the cost of a sufficiently pure ammonium nitrate will run in different localities nearly parallel to the variation in the cost of the gas, for it must be absolutely halogen-free and therefore, to be secured in the necessary quantities, must be especially made. This calculation is based on the use of 500,000 gallons per year and the employment of one man at $70.00 per month to run the plant under the supervision of the chief engineer. This percentage, therefore, will increase if less, and decrease if more, than this amount be manufactured yearly. It covers the upkeep of the plant, but does not allow for interest or general depreciation.

5. It is an advantage to have gas of known purity, and of sufficient purity to be absolutely safe. The tanks are fitted with a small outlet for testing. We test every lot of gas made, after it is in the tank and before it is sent to the operating room.

The result upon the quality of the product of scrubbing the gas with acid, as demonstrated at Lakeside, has convinced commercial dealers. Both of the manufacturing plants of Cleveland (the Ohio Chemical Co. and the Lennox Chemical Co.) have recently installed this process in their plants, so that it is now possible to purchase a safer commercial gas than heretofore.

THE COST OF INSTALLING A PLANT.

The cost of running pipes from the plant to the operating room depends entirely upon the distance and the difficulties. It is exactly the same as for running a ¾-inch water pipe; and this figure can be determined and the work done by any plumber.

The cost of installing two storage tanks for nitrous oxide and one for oxygen, with all fittings, gate valves, pressure-reducing valves, and all accessories and labor, is about $600.00, varying a little with the nearness to boiler works and the local price of labor. This outfit and the piping to the operating rooms gives the hospital the first three advantages from the plant listed above, and will save one-quarter of the cost of the gases over any method of connecting commercial cylinders of any size directly to the machines for giving the gas; and it will also make possible distinctly better anesthesia. The outfit requires one hundred square feet of floor space in the basement, or wherever it is located, for the nitrous oxide tanks, and fifty square feet for the oxygen tank.

The cost of installing a manufacturing plant modeled after the plant at Lakeside, of a size having two retorts, is $1,500.00 to $1,800.00 in addition to the $600.00 for storage tanks and the cost of piping to the operating room. The exact figure varies on account of several factors, the most important of which are the facilities for connecting with water and sewer, and the method of securing the heat selected, i. e., gas, coke, oil, or coal. The two-retort size is recommended for hospitals using anywhere between 100,000 and 1,000,000 gallons a year, because a mishap rarely affects both retorts. The plant to manufacture nitrous oxide will require three hundred square feet of floor space, and a small room (one hundred square feet) will also be needed for the storage of chemicals and supplies.

The additional cost of equipment to compress to liquefaction (1,500 pounds pressure) in order to fill small cylinders for use outside of the operating rooms, is $300.00. This would be advisable in some institutions, but in others unwise, the deciding factors being the amount of compressed gas used and the local price charged for it; also the qualifications of the chief engineer, as this pressure is too high to be handled easily. This equipment will occupy fifty square feet additional. The total floor space required amounts therefore to 600 square feet.

To give the reader some idea of the amount of machinery and apparatus of which such a plant as described above consists, the accompanying sketch is printed.

In order to insure to hospitals and the profession any and all advantages or benefits from methods in use or apparatus devised, applications for patents on all new processes and special designs have been filed in Washington, and all patents granted will be held by Lakeside Hospital to guarantee the free and unrestricted use of such advantages or benefits.

THE CONDUCT OF AN UNENDOWED SMALL HOSPITAL[1]

Forms for Managing the Finances—Divisions of the Organization for Doing the Work—Fixing the Responsibility—Determining the Amount of the Charity Work

By NETTIE B. JORDAN, Superintendent Aurora General Hospital, Aurora, Ill.

PAPER II

IN investigating the business systems used by various small hospitals, I find almost as many methods employed as there are courses of study in our country schools. Sometimes the superintendent of a small hospital will attempt to adopt the system of some very large hospital; with the result that John Smith, say, has his name entered by several people in a dozen records, and costs the hospital a dollar for clerical service, when possibly he was admitted only long enough for a fifty-cent dressing. In other hospitals one finds little or no record, and confusion made worse by frequent changes of management.

DAILY RECORD

Date	Admitted	Dismissed	Births	Deaths	Remaining	Total treated

Form 1. Items covered in daily record.

Name..... Residence.....

Date admission..... Age..... Sex.....

Married..... Single..... Occupation.....

Native..... Attending physician.....

Name of nearest living Relative and address .....

Family history.....

.....

Disease, medical or surgical.....

..... Anesthetic.....

Date of discharge..... Result.....

Ward, rate..... Private room, rate.....

Form 2. Admission card—5 x 3 inches.

THE AURORA HOSPITAL

Name..... Residence.....

Account payable by.....

Date	Services	Charges	Date	Credits

Form 3. Reverse side of above—contains 10 lines.

Far too few of our small hospitals are run on a well-regulated business basis. The result is friction in the management, and criticism from the public. One board member will demand stricter economy, while another is asking for better service. The hospital is fortunate that has on the board a member with courage enough to go more deeply into such disputes and make a comparative study of service and costs.

At this point I make bold to say that it should be compulsory for some member of every hospital organization to attend the American Hospital Association meetings. Unless we can get representatives from the thousands of hospitals in the United States and Canada to come together, there is little hope of standardizing hospital service. I wish also to say that most hospitals, both large and small, fall below the standard the medical profession would like to see them maintain.

In a subsequent article I intend taking the liberty of expressing what I believe to be the real sources of power as well as the weaknesses of each class of hospitals. In the small community hospital, local conditions, which I might describe as due to the personal equation, are by no means to be disregarded. Hard and fast rules may work admirably in a factory, but where human life is in the process of rebuilding one must take account of the hypersensitive state of the overanxious relatives and friends.

The clerical system in Aurora Hospital is simple, but has proven its accuracy by the test of a number of years. To the system of handling the finances there are two essentials: an accurate and accessible record of all money taken in; and a checking and voucher system of all money paid out.

AURORA HOSPITAL ASSOCIATION
Aurora, Illinois.

Date..... 191....

.....

.....

Enclosed find check No.....for $.....in payment of invoices as listed below:

Date	Amount	Date	Amount	Date	Amount

AURORA HOSPITAL ASSOCIATION.

No receipt required. By.....

Form 4. Invoice account to accompany checks. Form is 7 x 5¼ inches, with 10 lines.

[1]This is the second in a series of papers on "The Conduct of an Unendowed Small Hospital." In January, "Raising Funds and Financing a Small Hospital." Next month, "Comparative Service in the Community Hospital."

The first question that naturally arises is, through how many hands does the money pass? Three people are empowered to itemize bills, receive money and receipt for it. They are the superintendent, assistant and bookkeeper. The receipt books are numbered and when the amount is entered on cash book and card the receipt number is also recorded. Receipts are made out for all cash and checks, and a daily audit keeps the books straight.

The cashier of the bank acts as treasurer of the hospital under a twenty-thousand-dollar bond with two sureties. All bills are paid by check, after the board has passed them; thus the bank does the bookkeeping. Special checks may be issued by the superintendent and secretary of the board for bills that allow a cash discount and for employees who may leave between paydays. Bills are paid monthly and the records are kept clear. By prompt payment the hospital has better credit and a closer purchasing power, and gets the benefit of cash discounts and better service from tradesmen.

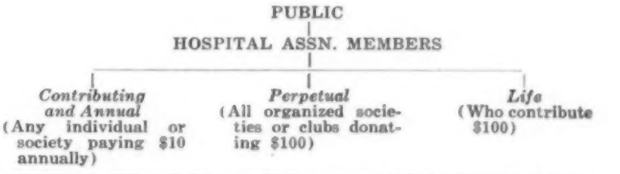
We arrange to have an ample cash balance always at the bank, in order to facilitate prompt payments. We anticipate any sinking of this reserve fund by putting on a charity day to secure more money.

The first consideration in our hospital is the welfare of the patient, regardless of financial conditions; but the subjects of medical and nursing care will be taken up in subsequent articles. The hospital admits only acute medical and surgical cases, but none from this class is refused admission because of lack of funds. Through the credit rating directory and on the advice of physicians patients are admitted to private rooms. In a small city the identity of patients is readily established, and their financial status is known.

Our charge for a private room, in the present old building, is fifteen dollars a week. Extra charges are made for pus dressings, special prescriptions, vaccines, electric fans, liquors and foods out of season. The laboratory work is done at the municipal laboratory or at a physician's private laboratory, and the hospital does not deal in this transaction. A charge of fifteen dollars a week is made for pupil specials. Board for graduate specials is charged at the rate of fifty cents a day. In a few months the present standard of rates will be advanced to cover the added expense of running a more expensive building. The county supervisor allows about a thousand dollars a year on homeless and indigent cases. The city donates seven hundred and fifty dollars a year for the cases picked up by the police department.

The method used to determine the amount of charity service is to take the difference between the net earnings from patients and the cost of operation, and divide by the per-capita cost; then subdivide into days of service paid by the city and the county, and the amount assumed by the hospital association.

Any interested citizen who has any business sense may audit our accounts with little difficulty,


PUBLIC
HOSPITAL ASSN. MEMBERS
Contributing and Annual (Any individual or society paying $10 annually)
Perpetual (All organized societies or clubs donating $100)
Life (Who contribute $100)

elect Board of Trustees, who appoint the following committees and officers:

President. Presides at all meetings. Member of all committees.
Secretary. Records all proceedings of the corporation.
Treasurer. Gives bond. Custodian of corporation's money.
Solicitor. Has charge of the legal business of the corporation.
Finance Committee. Consists of three members. Has general supervision of the finances of the Association. Audits each bill in connection with each committee authorizing the expenditure. Directors of fund raising.
Mayor of the City. Is member ex officio.
House Committee. Consists of three members. Directs management of buildings and grounds, with repairs and purchase of permanent supplies. Recommends members to the hospital administrative staff. Directors of the training school. Transacts all business not conflicting with other committees.
Superintendent. Member ex officio of all committees. Superintendent of hospital and training school. Makes monthly report to Board.
Supply Committee. Consists of three members. Supervises supply purchasing.
Auditing Committee. Consists of three members. Audits all books of the Association monthly.
Building Committee. Consists of three members, President of Board, President of Staff, and Superintendent of Hospital.
Staff Committee. Twelve members. Vacancies filled by majority vote of staff to Board, who give the appointments. Charity work. Consultants for medical and surgical house rules. Instructors to training school. Gratuitous care to sick nurses.

Fig. 5. Plan of organization.

and I have stated many times to business people that we invite anyone to inspect our records at any time. We are formulating plans for a surety organization for annual subscriptions to take the place of an endowment for the new hospital, which will incur heavier operating expenses.

Figures 1-5, herein, show the most important daily and monthly records, and the plan of organization.

The new $300,000 home of the Emergency Hospital, Washington, D. C., is expected to be ready for occupancy in May. The building is a nine-story structure, 100 x 100. It is constructed of gray pressed brick, with Indiana limestone up to the first floor, and limestone trimmings. The emergency department, the waiting room, and the operating room are located on the first floor, and so is the dispensary, which has a separate entrance. The administration offices are also on this floor. On the second floor will be the men's ward, for both white and colored, with sixteen beds each and room for additional cots. One of the main features of each floor will be the nurses' lookout station, with a glass front, from which every bed in the ward can be seen. There will be a roof garden and sun parlors. The private rooms will be directly connected with private baths, and will have exterior telephone service.

The MODERN HOSPITAL

Editorial Office . . . . . Tower Building, Chicago
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Hospital Staff Appointments.

As soon as a community begins to agitate for a new hospital, or whenever the broadening of the scope and influence of one already in existence is mooted, there begins at once a discussion of the medical staff, obviously because everyone recognizes the medical staff as the predominating factor in the success or failure of the institution.

In the course of such a discussion, laymen, trustees, the influential members of the community, and sometimes even the members of the medical profession itself, tacitly agree that the prominent medical men in the community must be on this new medical staff, as guaranteeing the high class of the institution. Nothing is farther from the truth of this inference.

If there is already a hospital in the community, it is usual that the prominent medical men of the locality are on its staff, and in most cases their prominence has come of their hospital connection and the opportunities that connection has brought them; and generally such men are most desirable hospital staff members. But too often, because a medical man is popular and has a large practice, it is assumed that he will make a good hospital man, though he may never have had a hospital connection in his life or worked in a hospital, even as an intern. He may not know a hemoglobinometer from a blood counter, and by reason of his not having kept abreast of modern medicine, his capacity for diagnosis may be confined to his personal examination of the patient at the bedside. The men who belong to this latter class are generally past middle life, they have become set in their ways, have little patience with "technic" of any kind, and are wholly incapable of fitting into the administrative or scientific necessities of a modern hospital.

It is far better to take men of the newer school of medicine, men who realize what modern medicine is, men who have served an apprenticeship in a good hospital, under modern teachers, and under the discipline of a scientifically conducted institution. Such men, even though they be too young to have acquired large practices, will grow rapidly, as compared with the others, and even two or three years will bring to them reputations that will fill your hospital with the best class of patients in the community.

The New "Habit-Forming Drugs" Law

The Harrison law, which goes into effect March 1, and which prescribes conditions under which "habit-forming drugs" may be distributed, dispensed and administered, seems to have occasioned a good deal of uneasiness in many hospitals; and great numbers of inquiries, and some protests have come to THE MODERN HOSPITAL about the new law; and there seems to be a feeling that the hospitals should have been exempted from the provisions of the law, and that they should not be compelled to register under it, or give an account of the amounts of the "habit-forming drugs" they buy, sell, or dispense.

The law covers "opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof;" and provides that those who propose to "manufacture, dispense, sell, distribute, or give away" any of these preparations shall register with the collector of internal revenue of the district the name and place of business, and pay to the collector $1.00 per annum. Employees need not register or pay the fee or make reports.

Under the law these drugs or any form of them can be sold or distributed, or dispensed on written order only. Doctors' prescriptions come within the meaning of this point, but a person registered to sell these drugs may give or sell them only to one registered, under the law, to receive them.

Anyone registered to handle these drugs in any way must take an inventory of his stock on hand on March 1, and report the inventory to the collector at the time he goes to register. Everyone proposing to handle these drugs must order them on a blank form obtainable only from the collector, at the rate of $1.00 per hundred blanks.

Hospitals must make their inventory, report it to the collector, pay their $1.00 for the registry, buy blank forms on which to buy more stock, get a prescription from the physician for every particle of any of the drugs dispensed, or a written order from anyone else. Doctors must be registered, in order to be allowed to prescribe the drugs, and any other buyer must also be registered.

The only exceptions under the law are government officials of the United States, or of a state or county, and prison and hospital officials operating under federal, state or county control.

There seems no good reason why hospitals should be exempt from the provisions of this law. Those institutions which realize their responsibilities in regard to habit-forming drugs must welcome any serious attempt on the part of the government to regulate and control their use, for the purpose of diminishing their terrible ravages. Institutions and physicians who are careless about prescribing and dispensing drugs known to have such far-reaching capacity for harm, should have some supervisory power over them to compel them to caution.

The requirements of hospitals are neither exacting nor complicated, and hospitals should gladly come within the meaning, spirit and letter of the law.

Dispensary and Out-Patient Work

Last month we announced, among other new departments of THE MODERN HOSPITAL, one to treat of Dispensary and Out-Patient Work, to be conducted by the committee on this subject of the American Hospital Association.

It has now been decided that Mr. Michael M. Davis, Jr., chairman of the committee, will personally assume responsibility for the conduct of the department, and that his committee will cooperate with him along the lines of a definitely prepared program.

This new department, the first installment of which appears among the other departments of this number, should be of the greatest helpfulness to hospitals everywhere. We know now that a hospital is not a thing within four walls, but that it is a part of the life and welfare of the whole community; that we cannot hope to be of wide usefulness without an intimate touch with the homes of the people to be benefited.

The dispensary and the out-patient service are the links connecting the hospital with the people outside, and only through their agency, supplemented with home and visiting nursing, can we bring the essentials of the public health, hygiene, sanitation and preventive medicine to their largest fruition.

Every hospital, large and small, must do this work in the future.

But hospital people are very busy with the inordinate amount of detail involved in administration. Mr. Davis and the members of his committee are acknowledged leaders in the field of this auxiliary hospital service, and we may look forward with certainty to the guidance and advice that they will bring us. The other members of Mr. Davis' committee are: Dr. Andrew R. Warner, superintendent Lakeside Hospital, Cleveland, Ohio; Dr. Joseph B. Howland, assistant administrator, Massachusetts General Hospital, Boston, Mass.; Dr. Willis G. Nealley, superintendent Brooklyn Hospital, Brooklyn, New York; Dr. R. B. Seem, assistant superintendent Johns Hopkins Hospital, Baltimore, Md.; Mr. G. W. Olson, superintendent Swedish Hospital, Minneapolis, Minn.; Miss Elizabeth F. Miller, superintendent Flushing Hospital, Flushing, New York.

Are You Going to the Convention?

Dr. Boyce impresses upon us all again, through this number of THE MODERN HOSPITAL, the desirability, even the necessity, of attending the convention of the American Hospital Association.

Hospital architecture, equipment and administration are growing too complex in this day of high health ideals for us to attempt to do our work alone; no one person can specialize in all its intricate branches and byways; it is necessary therefore that we shall somewhere have a clearing house for hospital information. It is unfair for a board of trustees to expect its superintendent to keep in step with the giant strides of progress, staying at home. Hospital administrators' salaries are too meager to enable them to finance their own attendance on the conventions, and without question the money devoted to sending its superintendent to the conventions is the most wisely spent money in the hospital's budget.

And again, hospital administrators are very hard-working people. There are sick people to care for twenty-four hours a day, and three hundred and sixty-five days in the year. Every instant is an emergency in the hospital—some patient stands on the brink; a slip, a false step by a nurse, an intern, an orderly or a department head may decide whether a life shall be lost or saved. Hospital administrators appreciate this, and even in their sleep their responsibilities hover near to disturb them. Do not these people need a rest, away from the scenes of their daily anxiety and labor?

The wise board of trustees, having in mind the greatest good of the sick entrusted to their care, and the best possible use of the money given to them for the purpose, will send their superintendents to the San Francisco convention.

Elsewhere we publish some most useful information about the convention, prepared by Dr. Summersgill, our Pacific Coast News Editor. It is a most attractive program, leaving altogether out of consideration the program of the convention itself, which Dr. Boyce tells us is to be the best we have ever had.

Superintendents should go to their boards at once, present the matter of the convention to them, just precisely as they would propose the expenditure of money for any other valuable thing the hospital needed, and ask them to vote the amount the trip will cost.

Almost Everybody Pleased

Almost everybody seems to be happy over the beautifully political settlement of the tangle over the new superintendent of the Boston City Hospital.

A $2,500 annual pension for retiring superintendent Dr. McCollom was applied to grease the skids by which that veteran administrator was released to make way for the mayor's family physician, Dr. John J. Dowling; Dr. Frank B. Holt, long time assistant superintendent, who should have had the new job when it really became necessary to retire Dr. McCollom, had his salary raised from $3,000 to $3,500; several surgeons and physicians have been rushed into print to tell what a great superintendent Dr. Dowling will make—and the air is filled with flying promises by the mayor and his friends about what great things are going to happen to the City Hospital.

We started out by agreeing that almost everybody was satisfied with the new political deal at the Boston City Hospital; that isn't quite true, but whatever criticism there is comes from two wholly unimportant factors, the nonpolitical public of Boston, who are not—between elections—of any consequence, and the sick poor of that city—evidently also unimportant.

In the meantime, let us not lose sight of the main point about this controversy: the Boston City Hospital had become one of the finest institutions for the care of the sick, in this country, under the administration of trained hospital administrators, Dr. Rowe and Dr. McCollom. The trustees, heretofore, had appointed trained and tried men, and had supported them, and let them alone. Now, all of a sudden, the mayor's family physician, a worthy clinician, wholly without administrative training, is appointed.

We haven't heard yet from the trustees of the hospital, without whose votes the mayor could not have executed "the deal." What do they think about their new appointee, and how do they figure it out that he is a better appointment than Dr. Holt would have been? This new board set out a year ago to make plans for the hospital "far into the future." Is the appointment of a new superintendent a sample of what is to come "far into the future?"

The Real Work of Hospitals.

Statements recently made by alienists and others interested in the care of nervous and mental diseases, that if it were not for alcohol and its associated stimulants and excitants the need for hospitals would be greatly lessened, have caused widespread comment and discussion, perhaps partly owing to the prohibition wave that is sweeping over the country.

There is no doubt that drink and narcotic and stimulant drugs are responsible for a very large percentage of sickness, crime and unhappiness. But that the need for hospitals would be less if these baneful agents of misfortune were absent, is open to discussion.

When I was a very young man, just graduated from my internship, I decided to seek a location in which to "hang out my shingle," and I sought everywhere to find the most unhealthy neighborhood for my activities. Finally my old preceptor, a wise old man of the world, learned indirectly of my quest and asked me about it.

When I had told him, he gave me the following advice, which I have remembered and employed in many devious ways:

"Son, don't go into a sickly place," he said; "the people there will be too poor to pay you; go to a healthy neighborhood where the people are pretty sure to be prosperous. They will need a doctor too, just about as much as those in the sickly community, because, being prosperous, they will hunt up a doctor for little aches and pains that the poor would never think of consulting a doctor about." Medical men everywhere know that this was sound advice, and that the principle holds faster today than it did thirty years ago.

Is not the same thing true of hospitals? We see evidences of it whenever money gets scarce and the times are hard. Even people who have surgical diseases postpone operation "until money gets a little easier." When times are good people pet themselves, make far more of their slight indispositions and go to a doctor and to a hospital oftentimes just to have a good rest and a quiet

time, and incidentally to have doctors and nurses make a fuss over them.

When there is a lot of sickness, we think of curing and caring for only the really ill; when there is not a great deal of sickness, we begin to think of preventive medicine in the abstract, of life extension work, of better living conditions for the poor, of precautionary and remedial work with children, of improving defects of mind, of vision, of digestion—in short, a thousand odds and ends of the public health that we would have no time for during epidemics or very sickly seasons.

So it really makes no difference to the hospital, so far as the amount of work is concerned; good hospitals are going to be busier, and always busier, far into the future. And if there were no really sick people at all, the work of good hospitals would be far more worth while than it is today, because they could do more permanent good in helping to raise the standards of health and adding to the physical, mental and moral happiness of all the people, than they can in merely curing temporary acute illnesses.

By all means let us join the hue and cry against alcohol in all its forms, and against the unnecessary use of harmful drugs, but let us not get the idea that even if these things were banished forever, the hospitals would have less work to do.

Announcement of Purchase

THE MODERN HOSPITAL Publishing Company has purchased the *International Hospital Record*, of Detroit, Michigan, its good will, collection of illustrations, library, subscription lists and other assets.

After the publication of the February number, which is brought out by Mr. Sutton, the *International Hospital Record* will be discontinued, by incorporation into THE MODERN HOSPITAL.

The discontinuance of the *International Hospital Record* must bring regrets to a large number of hospital people who have been on the firing line for better hospital standards. It was inaugurated nearly eighteen years ago, has lived through the most vital hospital changes that have occurred in centuries, and can lay claim to having been a large factor in hospital betterment during the years of its existence.

It has been no easy task to conduct a journal so special in character as a hospital publication must be, and Mr. Sutton, its veteran publisher and editor, during all its existence, has found the work too exacting, especially in conjunction with his printing business and the publication of his system of hospital records.

Mr. Sutton will continue to print and sell the hospital record forms, and since these have long since made their place, especially in the smaller hospitals of the country, he should find a profitable and interesting field for his activities. We bespeak for him the continued good will, the high respect and the patronage of the hospital people, which he has enjoyed in the past.

Dr. Hirsch's Third Paper

The third article of the series, The Hospital X-Ray Laboratory, was received too late for publication in this issue and has been held for the April number.

OHIO INSANE HOSPITAL SCHOOL A SUCCESS

Experiment to Educate Inmates Is to Take on Permanent Character and Be Expanded

The school at the Massillon (Ohio) State Hospital, which was conducted for some time as an experiment, and was described in an earlier issue of THE MODERN HOSPITAL, has been permanently put into practice. According to the plan evolved by Superintendent H. C. Eyman, the insane wards are divided into classes and each class is given instruction appropriate to its degree of mental development. The objects of the school are manifold, but the chief aim is to endeavor to improve the mental condition of the patients. The theory underlying is that mental exercise is the best stimulus for diseased mentality, just as physical exercise is supposed to promote the development of the body. In addition, the general school work, even in cases where it might be of questionable advantage in aiding feeble mentality, would have the advantage of keeping the minds of the patients engaged, and thus aid those whose condition is aggravated by constant brooding and worry. It is thought that the school will afford a general occupation for the insane that could not be provided in any other way.

RADIUM AT LOWER PRICE

American Government Officials Have Devised Process for Cheaper Extraction of the Precious Metal

In the annual report of the Director of the U. S. Bureau of Mines we are informed chemists and engineers of the bureau have demonstrated that a process has been devised for the extraction of radium from ores which can be used on a large scale, and will prove more efficient than that used by the largest foreign producers. It is claimed by this process it is possible that the cost of radium to the consumer will be reduced to one-third of the present price. The process is to be patented and dedicated to the public. Radium now sells at $120,000 a gram, but can be produced by the new process for $40,000 a gram, thus bringing it within the range of possibility for many of our small hospitals to purchase a supply.

St. Luke's Hospital, at Baltimore, Md., has been absorbed by the Maryland Homeopathic Hospital, North Mount street, Baltimore. All of the equipment will be combined at the latter institution, which will be known as the Hahnemann General Hospital, and it is announced that plans have been prepared for rebuilding the Mount street plant at a cost of $250,000. It is understood that the funds will be supplied by the national body of homeopaths.

RELATION OF THE STAFF TO THE ADMINISTRATION OF HOSPITALS.[1]

The Hospital Staff Should Be Given Organic Recognition With an Executive Committee Having Certain Administrative Functions—The Hospital Superintendent Defined.

BY DAVID L. EDSALL, M. D., BOSTON.

Innumerable instances in history have shown that with large undertakings and small ones a sense of loyalty and contentment gives the soundest basis for efficient and earnest service, and that the one thing beyond all others that is likely to make or break loyalty is the manner in which people are governed.

In hospitals, as well as in many other undertakings, therefore, the method of administration and control is a matter of the deepest importance, not simply from the standpoint of economical management, but from the standpoint of making the institution yield all that is possible in its chief business—the care of the sick and the improvement in methods of diagnosis and treatment.

It is, I think, self-evident that hospitals must be, in the final issue, under the control of boards composed chiefly of laymen. Besides other reasons, the financial problems involved in the conduct of a hospital are of themselves big enough to make it plain that there must be men of financial training in control of the large business affairs of a hospital, and, since divided authority always makes for confusion and all questions ultimately depend on the means of financing them, it is clear that the controlling board must have final authority over any matters that occur in the hospital if circumstances appear to them to demand in any instance that the board should exercise authority.

It is also, I think, clear that such boards, like all boards, need to have some individual executive officer who shall have full power to exercise his judgment in certain ways in the conduct of the institution, subject only to the control of the board. We can scarcely question the proposition that the board must have final authority when it wishes to exercise it, and must have an individual executive officer. The question before us in regard to the trustees and the administrative relations of the staff to them is, May they not advisedly give to the staff the opportunity and responsibility of conducting many details, retaining the power to revise the staff action in any case, but exercising this power only when important divergencies of opinion demand it?

In regard to the administrative office, the questions are chiefly what manner of man shall he be, what shall his relations with the trustees be, and what his relations with the staff? That is: (1) Is he to be chiefly a steward, or is he to be not only this, but also much more than this? (2) Is he to be the deputy of the trustees, or also to a large extent their guide? (3) Is he to be the superior of the staff in all things, or their superior in some and essentially an adviser in others?

As to the relation of the staff to the trustees, it would seem scarcely necessary to say that more loyal and valuable service would be rendered if the staff had some power of directing its own work and of determining the character that the advances in the hospital's work shall assume, than if it had not. Tacitly or openly this has been recognized in most hospitals; openly in some by establishing some official method by which the staff may control more or less of the activities of the hospital; tacitly in others through asking the advice and opinions of some members of the staff who gradually come to be recognized as especially wise or especially congenial to the board in their point of view. One of these methods must be used in any successful institution, for no undertaking can be long conducted successfully without some method of keeping in touch with the spirit of those who actually carry on the work, and no undertaking can secure and hold the services of vigorous-minded men who are leaders in their work without in some way giving them some authority, advisory or otherwise—not only over their own work, but over the conditions under which they work. Of the two forms of recognizing the opinions of the staff, the open and clearly defined method seems far the better. The method of listening to or actually asking the opinions of a few men who have no especial official relations to the board has the disadvantage that then the advice is usually asked of men who are known to be of congenial viewpoint, whereas what is quite as much needed, usually more needed in order to reach fair and wise decisions, is the opinion of those who differ in their views. Furthermore, the unofficial, irregular way of securing advice always leads to a condition like that of a king's favorite—the advisers usually hold their influence only by favor, and are always in a precarious position, which is often held only by some degree of finesse and lack of frankness, and this soon comes to mean politics. This tends toward confusion and jealousies, and destroys, rather than aids, general cooperation and loyalty. A regularly established official and continuous method of staff control of certain of the activities of the hospital—either executive or advisory, or both, in its nature—carried out by persons who are recognized by the staff as having the right to do this by virtue of their staff positions or through election, seems the only natural and secure way of accomplishing the object in view. The only questions that seem to need argument are, What shall be the duties of such a body and how shall the members be chosen?

As to the manner in which they shall be chosen, it would seem essential that the heads of the important services should be members of the body. They must control their services, or there would be confusion at once, and they cannot control their services if they themselves are controlled by others. It is also essential that the body representing the staff shall be small. Nothing reduces the effectiveness of any such body so much as large size. This is another of the many important arguments at least for continuous services of departmental heads. With rotating services, the number—if all the heads of services sat on this body throughout the year—would be so large as to be very unwieldly; whereas, if only those on duty were active on the body, it could no more exercise wise governing powers than could a board of trustees or a superintendent that changed every three or four months.

The question of the duties of this body depends on what the duties of the administrator of the hospital are. These duties vary in different hospitals from those chiefly of purchasing agent and adjutant of the trustees to those of a real executive, who not only controls the routine, but who plans and guides the administrative progress of the hospital. If the first-mentioned character of position is given him, the staff must exercise more administrative functions, or they will not be carried out and the hospital will do only routine. If the latter kind of man is at the head, the need of administrative activity on the part of the staff, while still very important, will be more restricted and in some ways advisory rather than executive.

It is difficult for me to see how there can be any difference of opinion in regard to the kind of executive needed. Hospitals have often become known through the

[1] Symposium with Dr. Cabot, read before the Philadelphia Pediatric Society, June 5, 1914.

medical and surgical work done in them by individuals without being in any way important as hospitals, just as otherwise unimportant towns often become known because of great men being born in them.

But when hospitals have had an important influence on hospital problems, there has usually been a vigorous and strong-minded man at the head of the administration, and in the nature of things this must usually be true. Everything that tends to make the hospital superintendent a man of large ability, fine training, and definite individuality is to the advantage of the hospital, and thus, necessarily, to the staff. One of the very first things necessary to lead such men into these positions is to give them suitable recompense for their services—on the one hand, in actual salary, but also in dignity of position and in responsibilities, and to avoid making them subordinate in any ways compatible with general interests. It is sometimes advocated that the superintendent be essentially a superior steward and purchasing agent, and that the staff heads of departments be given in all other ways financial as well as medical control of their departments. I cannot see how this character of administrative power for the staff is feasible, or how it could be successful, unless the staff chiefs had a long training in administrative matters before they were appointed, and spent a very large part of their time in administrative routine after they were appointed.

One of the frequent complaints of the staff, and one at times justified, is that the superintendent is the creature of the trustees, and that the staff needs receive no really judicial attention from the administration—that they are looked on in no more sympathetic way than the demands for new coats of paint or a new engine boiler. Nothing is more likely to make the superintendent take this viewpoint than to make his position that of a steward, and nothing is more likely to make him nobody's creature, and a wise judge of the general advisability of any expenditure or change in policy, than to secure a man of superior ability and individuality. It is often said that, when given decided powers, hospital superintendents, as well as other people, grow arbitrary. Determination and clear-headedness and justice to conflicting interests are sometimes mistaken for arbitrariness, but there is some danger that anyone may grow arbitrary if not either controlled in some way or at any rate made to show reasons for his actions. Few men can, however, be persistently arbitrary when opportunity is constantly given to demonstrate to them and to others that they are arbitrary, and such opportunity comes when proper organization and powers are given the staff.

To consider, therefore, what the independent powers of the superintendent should be, subject only to the control of the trustees—these and the powers of the staff cannot be and need not be defined in detail. To avoid confusion, he will often need to have the deciding voice. But some of his duties are clear. The general housekeeping of the hospital must, of course, be under his entire control, as must general matters of discipline, though, so far as the latter are concerned, any action should of course be taken against any member of the staff only after consultation with the head of the service, or the body representing the staff, and important matters of discipline relating to the staff should go to the trustees only after discussion with the department head and the staff committee, and dissenting opinions should be expressed. The administrator must, of course, have the nomination and control of his assistants. He should be trained in hospital construction, and should devise plans for new constructions—of course with the aid of architects so far as necessary, the plans being always subject to the advice of the representative staff body. He should be expected to devise new methods of organization when desirable, plan new general policies, and in many other ways be an active leader in the whole scheme of hospital progress, always presenting any such plans and changes to the representatives of the staff for their advice if they do not solely involve his own department.

The question of the training school for nurses is one of much importance. Whether the superintendent should entirely control it, as is usually the case, is open to discussion. I believe the staff should be kept informed of all the activities of the training school and all important changes in it, through a body of staff representatives, and this body should be expected to give advice. This is especially important in order that the staff may have an educated acquaintance with this work in broader ways than merely through observation of the nurses that each individual staff member meets in his work. This is all that they usually know about the training school. For the training school it is important in order that it may continuously have the interest and advice of a group of medical men who know its work and its problems, and can therefore advise wisely. For various reasons, however, the administrator should be more largely in control of the training school.

Now, as to the duties and powers of the staff representatives, I feel wholly clear that this committee should have executive powers as well as advisory. Purely advisory bodies soon languish and usually die. Such a body is worthless or harmful unless it does its work promptly and thoroughly, and spends thought and time on it. No group of able men will work in this way unless their work counts and their advice is usually accepted. If this is the case, they actually constitute an executive committee, and it is only unnecessarily belittling to it to call it advisory. Certain of its duties are apparent. They should resemble those of a properly constituted university faculty:

1. The heads of departments should have power to nominate all the subordinates in their departments. They should nominate to the staff committee, the nominations being subject to rejection in the occasional instances in which matters unrecognized by the departmental head justify this unusual action. When forwarded to the trustees, the latter should stand ready to accept the nomination unless unusual circumstances and clear reasons force them to do otherwise. In that case they should ask for another nomination from the staff committee. Heads of departments should be nominated by the executive committee after the same manner. This is, I think, the most essential of the powers to be given the staff. Persons of individuality demand, first of all, that they shall have suitable and congenial fellow-workers.

2. The heads of departments should have power to conduct the affairs in their own departments as they see fit, so far as this does not involve increased expenditure of money, but any arrangement in each department that involves the interests and privileges of another department or of the hospital at large should be confirmed by the executive committee.

3. The rules of internal government of the staff and its activities should be determined by this committee, excepting for those few general rules which necessarily come from the trustees. This committee should control recommendations to the trustees regarding changes in the character of the work of any members of the staff, changes in the distribution of beds and other facilities, the establishment of new clinics, and other new staff activities. While the heads of services should be expected to improve ex-

isting conditions and originate new activities in their departments, this committee should be expected to do the same as regards the general activities of the hospital and the relations of the various departments to each other.

In all these affairs the trustees must, of course, reverse the action of the committee if it recommends unwise expenditure of money or unwise policies, and especially if its action seems to be the result of oncoming fossilization. But the spirit of the trustees, after establishing such a committee, must be to trust its action as that of a group of experts, and to accept its opinions unless convinced in any instance that it is seriously important that other action should be taken. It is for the best interests of the staff, and is necessary to stimulate them to constant progress, to feel that their actions are neither actually nor virtually absolute; but a spirit of mutual trustfulness must be encouraged earnestly even at the sacrifice of personal views, or this or any other scheme will finally fail of real success.

Let me recur to the question of the personnel of the staff committee. This will necessarily vary in different places, but there are two essentials—(1) that the heads of important services should, as already said, be on the committee; (2) that the superintendent be on the committee. This latter point is, I think, the most effectual method of quieting friction between the staff and the superintendent. Some persons would urge that the committee be entirely free of his influence and represent only the staff opinion. I believe the direct contrary accomplishes just what is so often needed—that by regularly and officially deliberating with the staff representatives he learns their needs and the reasons for their point of view to a degree that can be accomplished in no other way, and any wise man will be both educated and influenced by this in matters over which the staff has no executive powers as well as in those in which they have such powers. Quite as important as this, the staff will learn of many administrative details and difficulties, otherwise unknown to them, that will often lead them to alter their views.

There is, too, a side to this that is often overlooked. Put men, staff, administrators, or others on a body where they must express their opinions openly and support them against argument, and any fair man will follow his expressed opinion; leave him outside of such a body, and he is free to do as he pleases, and the automatic opportunity of influencing him—indeed, of morally controlling him—is lost.

This brings up another qualification for hospital superintendent that I have not mentioned, but that is very important—i. e., it is extremely desirable that he should have medical as well as administrative training. The vast majority of the questions in which he must act are either straight medical questions or have important medical bearings. An army or navy surgeon-general has even more important administrative duties—indeed they are chiefly administrative—but it is, I think, generally recognized that an officer of the line cannot be really efficient in such a position. One important reason that nonmedical superintendents of hospitals are so common, and by so many are preferred, is, I think, that these positions have often in past years, like teaching positions in secondary schools, been used by energetic men as temporary stopgaps to enable them to get into financial position to do something more attractive, or more often they have been occupied by those who drifted into them because they had too little energy or ability to succeed in the general professional scramble.

There can be no doubt that an efficient layman is more valuable as a superintendent than an inefficient medical man, but there can, I think, be no doubt that an efficient medical man is still more valuable; and, as regards the relations to the staff, it is far more difficult for a layman to act really in cooperation with the staff, and much more likely that he will either become arbitrary, or, if flexible, will accede too readily to the staff viewpoint as against the general administrative standpoint for fear of making mistakes through ignorance of the medical side. He should know at first hand how to judge of medical questions. One of the chief reasons why there have been so few able medical men in these positions is that very often the salaries have been insufficient to obtain either able laymen or able medical men, and because the position frequently so largely resembles that of a steward that it attracts chiefly those who are of dull minds or who are in want. The cure for this is evident and has already been indicated.

In the general scheme that I have outlined there is nothing that is original. Some hospitals have gone rather farther than this, but I have attempted to sketch an administrative organization, not for institutions that have very unusual relations, but rather for those institutions that have already been established for a more or less considerable time, have accumulated staffs, traditions and customs, and have now come more or less acutely to the realization that the progress of events has made much of the existing scheme obsolete, ineffective, and unwise, and in need of some sort of reorganization.

What I have sketched is in most ways essentially the plan instituted at the Massachusetts General Hospital just before I went there. In this hospital, with its very old traditions, with everything long established on the more usual lines of administration, but so well administered as to have served as a model for many other institutions, a very radical reorganization was carried out by mutual desire of the trustees, the superintendent, and the staff, through which important powers and responsibilities have been given to the staff representatives. That the change has been to the very great benefit of the hospital is, I think, recognized by everyone, and it has worked with a smoothness that may well surprise one familiar with the diverse and complex interests of the hospital and the proper pride in and devotion to its traditions that is characteristic of the institution. This result fairly demonstrates the feasibility and desirability of similar reorganizations in many other long-established institutions.

The outline that I have given will leave many instances in your minds where it seems doubtful whether questions would be administrative or fall within the bailiwick of the staff committee, and many where it is not clear whether the staff would have executive or advisory powers. Many such instances arise, but they have given us little trouble. Nearly always, after discussion, action on them is unanimous, and is clearly taken, not because of individual feeling, but because open discussion has demonstrated the wise course of action, and I am sure that in most such instances no one on our committee has given attention to the question whether the action was merely advisory or not. The action has been almost universally accepted by the administrator and the trustees.

The manner in which the executive committee is constituted and the general statement of its powers is shown by the following rules of the trustees relating thereto:

ARTICLE 1. There shall be a general executive committee of the general hospital consisting of the two chiefs of service of the medical department, two chiefs of service of the surgical department, one of the chiefs of the special departments of dermatology, neurology, laryngology, and pathology, who shall be chosen among themselves by ballot

to represent them, and the resident physician.[1] The resident physician shall act as secretary of the board.

This committee shall have general supervision of the medical, surgical, and laboratory work of the general hospital. In matters affecting administration or the expenditure of money for medical, surgical, or laboratory purposes, the function of the general executive committee shall be advisory to the resident physician, or through him to the trustees. It shall make nominations to the trustees in case of vacancies in all staff positions.

Each department may signify to the general executive committee its preference for the vacant office.

ART. 2. In case of prolonged absence of a member of the general executive committee, other than the resident physician, the vacancy shall be filled in the following manner: in the case of a chief of a surgical service, the visiting surgeon who is substituting for him on the surgical executive committee; in the case of a chief of a medical service, the visiting physician who takes his place on the medical executive committee; in the case of the representative of the special departments, an alternate who shall be selected in the same manner as the representative of the social departments.

By the term "resident physician," as it relates to membership on the various executive committees, is meant the person who is acting in that capacity at time of meeting, whether it be the resident physician or one of his assistants.

ART. 3. The general executive committee shall prescribe, subject to confirmation by the trustees, house rules for the management of the various medical, surgical, and laboratory departments.

As illustrative of the actual activities of such a committee, aside from the nominations for vacancies and new positions and the many routine details, I would note some of the matters they have had to act on as described in the last year's report of the general executive committee of the Massachusetts General Hospital in a summary made by Dr. Richard Cabot:

FOLLOW-UP SYSTEM.—The most important achievement of recent years has been the establishment of the "follow-up" system urged by Dr. E. A. Codman. Up to the present time no hospital known to us in this country or abroad has had an efficient system of following the results of treatment after the patient leaves the hospital. Hence there has been no way of being sure that the medical and surgical work of the institution is as good as the present state of knowledge and the resources of the hospital, personal and financial, permit. Under the system which has now been established on the surgical side of the hospital, the relative efficiency of the surgical treatment of any given disease in different wards by different surgeons or by different technical methods can be estimated. Doubtless this follow-up system will later be extended in one form or another to all departments of the hospital. The children's department and the orthopedic department have already installed systems of their own, and the orthopedic out-patient service has succeeded in reducing the percentage of lost cases (those making one visit only) from 18 percent to 12 percent.

An efficiency committee has been appointed representing the medical and surgical departments of the hospital and the administration. This committee is studying in detail the work of one department after another, and, as the result of its work, important improvements have already been made in the organization of one department. This committee is entirely an instrument of the general executive committee to accomplish some of the detail of its work.

CLINICAL CLERKS.—Another important change which took place in September of the past year was the introduction of fourth-year medical students into the medical wards (as clinical clerks). There they are now taking part in the actual work of the hospital, and not merely receiving instruction, as in the past. Under the guidance of the house physician and the house pupils, these medical students are assigned to ward work in groups of twelve, each group remaining on duty for two months. They help the interns by assuming part of the work of history-taking and laboratory analysis. The opportunity thus furnished is also of more value in the education of the student than any system of teaching which gives him opportunities without duties.

HOUSE PHYSICIAN.—The appointment of a paid house physician for the east medical service was made during the past year for the first time, following the example of the surgical department, which has now had a house surgeon on both of its services for two years. The house physician can be called on by the house pupils to assist them in the decision of difficult points arising in the absence of the visiting physician and chief of service. He is also engaged largely in research work further described below. A similar appointment will be made on the west medical service as soon as a suitable candidate is available.

THIRD-YEAR STUDENTS IN OUT-PATIENT DEPARTMENT.—Our out-patient work has been improved during the past year by the compulsory assignment of third-year Harvard medical students in rotation to the different clinics. In former years third-year medical students were not allowed to work in the out-patient department, and it has been very difficult to secure an efficient staff of volunteers. Now this clinical work is assigned to them as a necessary part of their medical school curriculum.

CLINIC MANAGERS.—Another improvement in the efficiency of out-patient work has been achieved by the introduction in three departments—the throat, the nerve, and the children's medical—of clinic managers, young women who are not expected to do either nursing work or social work, but to see that the clinic moves along smoothly and without hitches, to minimize the necessary waiting of patients for their turn, and to attend to the interdepartmental relations—to patients referred, transferred, consultations, etc.

INDUSTRIAL DISEASE.—The out-patient record systems have been modified so that in the male medical and in the orthopedic departments special inquiries relating to the patient's occupation, to the material he handles, his possible exposure to dust or fumes or to special strains, are investigated as a matter of routine. Moreover, intensive work on the 147 cases of lead poisoning seen at the hospital since 1908 and on certain other points is being done through Miss Holton, of the social service department. So far as we know, this is the first systematic work in industrial disease undertaken by any American hospital.

MEDICAL STAFF CONSULTATIONS.—Beginning with October of the past year, weekly staff consultations have been held in the medical wards. Hereby the judgment of the whole staff is, so far as possible, focused on a few of the more difficult problems of diagnosis and treatment occurring in the patients then in the wards. A patient about whom either service has felt any doubt, either as regards what is the matter or what is to be done, has thus the benefit of an opinion from both chiefs of service and from the visiting physicians of both services. The pathologist of the hospital, Dr. Wright, has also been a regular attendant on these consultations, and has given valuable help. The assistant visiting physicians are also invited, and some of them have attended every meeting. These meetings occur each Wednesday, from 11 to 1 o'clock. The opinion of each of those present is written down, and, at one of the subsequent meetings, the correctness or incorrectness of these opinions can generally be checked up.

SPECIAL ASSIGNMENTS.—In the surgical services the system of assigning one disease or a group of diseases to a single man for periods of one year or more appears to be working satisfactorily, though it is thought by some of the surgeons that fewer such assignments should be made in the future. To some extent a similar system is being tried out in the laryngological department and in the department of pediatrics.

TECHNICIANS.—The system developed by Dr. Wright in the pathological department, of training and employing as technicians young women who are without previous medical or technical knowledge, seems to have worked admirably. During the past year 5,502 Wassermann reactions were tested with the help of these technicians, under Dr. Wright's supervision. (In 1912 the number corresponding was 2,262.) During the same period 1,475 tests of complement fixation in gonococcus infections were also made.

CHEMICAL LABORATORY.—During the past year Dr. Otto Folin, professor of biological chemistry at the Harvard medical school, has been appointed chemist, and with his assistant, Dr. Willey Denis, has been responsible for the more important chemical research work and chemical study required in selected cases among the patients in the hospital. The hospital is to be congratulated on securing the services of so eminent a chemist as Dr. Folin.

FEES IN THE OUT-PATIENT DEPARTMENT.—Up to March 1, 1913, the fee charged to all out-patients for some years had been 10 cents for each visit. For the remainder of the year the fee charged was 25 cents for the first visit, and 10 cents for each subsequent visit; children under sixteen years, 10 cents for the first visit and for all subsequent visits. Naturally, in suitable cases, all fees are remitted. This change was made simultaneously with a similar change by the Boston Dispensary, and has produced no diminution in the number of patients coming to our clinics.

HOSPITAL BULLETIN.—Beginning December 10, the Hospital now issues to its staff, trustees, and friends of the hospital a bulletin containing notes of new rules, appointments, meetings, and other matters of interest. This bulletin is issued as often as there is anything of importance to say, and serves to keep all of those who work for the hospital in touch with what is going on in the different departments.

LIST OF ABBREVIATIONS AND SYMBOLS.—The records of the Massachusetts General Hospital have been kept with exceptional care and thoroughness for many years, but now and then it is difficult to use them because there occur unexplained abbreviations or symbols on the charts or in the body of the record. These were current for a few years and were then understood by everyone, but soon after were dropped and forgotten. To guard against such inconvenience or loss of valuable recorded matter in the future, the hospital has collected and printed during this year a list of all abbreviations and symbols which are to be allowed in the writing of hospital records. A copy of this list is to be bound at the end of each bound volume of records.

NOMENCLATURE AND CLASSIFICATION OF DISEASES.—Up to the present time three systems of nomenclature have been in use by the hospital—that long employed in the wards, that more recently drawn up for the out-patient cases, and that employed in the pathological department. These differences made it difficult to study yearly variations in each disease treated at the hospital, and led to confusion in other years. In view of this a committee was appointed during the past year to draw up a new classification and terminology for the use of the entire hospital. This has been done after consulting all the available classifications made elsewhere. Our own classification recently printed can be used in connection with the international list of causes of death, though our list necessarily contains names of many diseases not listed among causes of death.

By the use of a specific number system, each number corresponding to a given disease or a group of allied diseases, comparison can now be made between our statistics and those of anybody who uses the international classification. Our own statistics will, we hope, be materially improved by this new arrangement.

HOSPITAL COURSES FOR PRACTITIONERS.—For several years past the hospital has been developing a system of teaching offered to local practitioners and others living at a greater distance. These courses are so low-priced as to be practically free demonstrations. The fee merely covers the cost of material and attendants at the hospital. These courses have been largely attended.

The medical courses, given by Drs. William H. Smith, Roger I. Lee, and Oscar Richardson, were attended by 67 and by 41 men respectively. The surgical courses, offered by Dr. Charles L. Scudder and Dr. Hugh Cabot, each drew 30 men. Dr. E. G. Brackett's course in orthopedic surgery drew 20 men. The hospital thus fulfills its duties to practitioners not connected with its staff by making available for their use the unusual clinical opportunities of its wards. These opportunities are eagerly grasped, some practitioners making weekly journeys to the hospital from cities outside Massachusetts.

PLANS AND POSSIBILITIES NOT YET REALIZED.—The need of extensions, or further developments of the hospital work, is constantly felt by all of those actively engaged in its service. Of the new buildings, need of which has been long recognized, plans have been completed for the administration building, which will be the next to be finished. A new ward for the treatment of fractures has been proposed and discussed; also new medical wards and a new pediatric ward. We have space enough on our land for all these extensions, but as yet sufficient funds are not in sight.

For a similar reason—lack of funds—we have been unable so far to meet the pressing need of an evening clinic, to serve those who must work during the daytime or lose much needed pay if they leave their work to attend a morning or afternoon clinic. But for a similar lack of funds a clinic for the mental examination and treatment of juvenile delinquents would be established, as the need of such a clinic has been pointed out from numerous authoritative sources.

Perhaps the most important point leading to the success and usefulness of our executive committee is that it

[1] The term "resident physician" at the Massachusetts General Hospital corresponds to the term superintendent as ordinarily used.

has met not only regularly, but frequently, and has sat each time long enough to clear up, so far as possible, any matters under discussion. Meetings occur at a scheduled hour each week; they have rarely been omitted because of lack of urgent business, and, nearly as often as omitted, extra meetings have been called for special purposes. The meetings have lasted at least an hour, often two hours, sometimes longer. This means, of course, a large sacrifice of time and a good deal of thought on the part of the general executive committee, but has given the members of the committee a degree of familiarity with the multiple activities of the hospital and with the bearing of matters in their own departments on other departments and on general hospital matters—in short, a power of impersonal viewing of the questions that they have to act on, and an education in deciding them with some wisdom that they could not otherwise have secured, and without which they could not have failed to do badly many of the things that they have been called on to do.

SOME FUNCTIONS OF SOCIAL WORK IN HOSPITALS.[1]

The Social Worker Is a Member of the Hospital Team—A Part of the Machinery to Turn Out a Finished Product —Her Value Reducible to Dollars.

BY RICHARD C. CABOT, M. D., BOSTON.

I want to begin by stating some of the things that social work in hospitals does not or should not undertake. In the first place, it is not nursing. It is not trying to do any portion of medical work, either that ordinarily done by physicians or that ordinarily done by nurses. It does not undertake to interfere with any one else's job.

In the second place, social work in hospitals does not concern itself with the relief of all hospital patients who are in trouble, or even all who are piteously poor. It is concerned only with those whose poverty is the cause, or an important cause, of their illness. The hospital social worker is not a district agent of the Associated Charities or of any other charity. She is an agent of the hospital itself, and her prime job is to perform such social analyses and give such social treatment as shall assist in the diagnosis and treatment of disease. She is there, like everyone else who serves the hospital, to assist in the management and alleviation of sickness. She is part of the diagnostic and therapeutic outfit of the hospital. And yet she is not a nurse or a doctor.

If, then, we are asked for a more specific and detailed account of what she does, I should say that she follows up and finishes up various lines of diagnosis or treatment otherwise left unfinished or unknown by the physicians and nurses. Just here come in the most convincing reasons for her presence: (1) no one doubts that a good job ought to be finished in case it is begun at all; (2) hospital work is undoubtedly a good job; (3) but hospital work is now begun and left unfinished—left hanging in the air, as it were—because of the lack of social work to supplement and complete it.

INDUSTRIAL DISEASE.

Whoever takes the histories of hospital patients almost always puts down some word or phrase to represent the "occupation" of the patient. In so doing he has begun an inquiry into the possible industrial factors in the patient's malady. Such an inquiry may be of great value for diagnosis and treatment, but it is almost always left in so fragmentary a condition as to be useless. It needs to be supplemented and finished in order to be of value. Thus many a patient is listed in hospital records as a "laborer" or "factory worker." Such phrases are not worth anything. One needs to know what kind of a laborer, what kind of a factory worker, the patient is. Otherwise we do not know whether he handles any poisonous substance, whether he breathes any poisonous dust, whether he is exposed to any sort of dangerous strain. Now, as it happens at the present time, the medical students who write the histories of hospital patients are entirely ignorant of industrial diseases. They do not know enough even to ask the proper questions regarding the patient's occupation and its bearing on his illness. Moreover, the visiting physicians, who are supposed to study and criticise these records, rarely know enough about industrial disease to do so. The social worker, on the other hand, by reason of her social training, has a particular interest in occupation so far as it may bear on disease, and, if she is properly trained, she can develop the industrial information obtained in embryo by the physician.

At the Massachusetts General Hospital we have one worker especially trained in industrial disease by Drs. Edsall and Linenthal of our staff. She has begun the work of reforming our hospital records. Every hospital in the country needs a similar reform in its records, which are now being searched in vain by students of industrial disease, by industrial and legislative committees, for the information which they ought to contain and so far do not contain. Our worker in industrial disease is also in very close touch with the third-year medical students, who are taking histories in the out-patient department, and is teaching them the essentials of history taking as it relates to industrial disease.

Her work also extends to the following up of known cases of industrial disease, to see whether they have understood the nature of their trouble, the precautions to be taken against it, and the possible means of cure. A recent investigation of nearly 150 cases of lead poisoning seen at the out-patient department of the Massachusetts General Hospital showed that only a small percentage of them had received any adequate instruction as to the nature of their trouble and the precautions to be taken against further attacks.

The social worker is also concerned to discover cases of industrial disease among those who have *not* come to the hospital at all. Her clew to the existence of such nests of patients is obtained from the few sample patients who *do* come to the hospital. Thus every case of lead poisoning means more cases at home, more cases in the factory, just as every case of syphilis or typhoid fever is itself a symptom pointing to the presence of other cases. The necessity for such follow-up work, extending to the persons who do not come to the hospital at all, has long been recognized in relation to tuberculosis, but has yet to be recognized on any large scale by the hospitals of this country in industrial disease. To treat the single patient with lead poisoning who is sick enough to recognize his symptoms and to come to the hospital is a good beginning. But from the point of view of thorough medical work it is *only* a beginning. It constitutes evidence of a focus of poisoning, of a nest of trouble, which it is quite inexcusable for a modern hospital to leave unexplored. Such exploration, which carries out into the community the hospital's campaign against disease, is an important function of social workers.

But, if the hospital is to take itself seriously as a factor in the prevention as well as in the cure of disease, it must constantly do *educational work* in relation to industrial

[1] Symposium with Dr. Edsall, read before the Philadelphia Pediatric Society, June 5th, 1914.

disease as well as in other fields. At the Massachusetts General Hospital we have prepared and sent out circulars of information regarding the dangers of lead poisoning and the methods of its prevention. We send these circulars to all the men in the lead-poisoned trades within the boundaries of Massachusetts—to all painters and typesetters. By addresses and circulars we try to spread similar information among labor unions and employers—for example, among those who are likely to employ a painter in their own households. I was quite amazed myself to find how ignorant I was regarding my duties as an employer when I had engaged a man to do some painting in my own house. The duty to provide a place where the painter can wash his hands, and where he can eat his luncheon away from the neighborhood of lead-bearing dust, are duties which, I venture to say, very few physicians or other citizens who employ painters have ever recognized. It is through our social worker that we have come to be a little less blind in this respect.

WORK FOR THE HANDICAPPED.

The hospital begins a good job when it amputates the crushed leg of a patient who has been run over in a railway accident. But it is the business of someone to see that patient through his troubles; not merely to see that his wound heals properly, but that he has a proper-fitting artificial leg and that he himself is fitted back again into the industrial world. The job is not done until he is again a wage earner. Obviously this sort of follow-up work goes beyond the function of the hospital physician and the hospital nurse. It must be carried out by someone well versed in the resources which the community contains for rehabilitating such a sufferer and putting him on his feet again in the financial as well as in the physical sense. This is an expert job, requiring a knowledge (1) of the industries in the neighborhood, of their individual processes and parts capable of being taken up by a person handicapped in one or another way; but, (2) moreover and chiefly, a knowledge of the *psychology of the unemployed*, of the types and stages of mental and moral deterioration which inevitably occur when a healthy man is thrown out of employment by an accident, and surrounded by the condolences and luxuries which his friends naturally consider to be proper. Such a man is very likely to take to drink, not only because he has nothing else to do, but because a drink is the form of consolation most frequently offered him by well-meaning fellow-workmen.

To find work for the handicapped is very difficult, and the effort has failed in most of the places where it has been undertaken. That it has succeeded at the Massachusetts General Hospital is due chiefly to the fact that we have selected with the greatest care from among the gross total of handicapped persons the few for whom we could reasonably hope to do something. We have excluded from the first all attempt to help those whose injury or illness made them really unfit for any work whatsoever. This group, *the incapacitated, should be sharply distinguished from the handicapped*—i. e., from those who are still fit for work, although in need of social skill to fit them back into the industrial machinery. At the other extreme are those handicapped persons, by no means rare, who find no difficulty in obtaining work for themselves without the aid of any outsider. Somewhere between the two extremes just suggested there is a group of persons who are not incapacitated, yet not capable of finding work for themselves. Many of these can be helped to find a job, and, what is far more important, to keep it when once they have found it; for the great majority of them grow discouraged after a little, and have to be bolstered up throughout the first six months or year of their work.

Our worker for the handicapped, Miss Grace S. Harper, has permanently placed handicapped persons aggregating a total of $6,500 in wages during a single year's work. This is nearly six times the value of her salary, and represents a profit of 600 percent on the investment.

WORK WITH CASES OF INFECTIOUS DISEASE (TUBERCULOSIS, SYPHILIS, GONORRHEA, SCABIES, PEDICULOSIS, TRICHINIASIS).

Of course it is not the function of the social service worker either to diagnose or to treat infectious disease. It is her work (*a*) to find the focus of infection, (*b*) to check the spread of infection, (*c*) to teach prevention, and (*d*) to get treatment for chronic or "uninteresting" patients.

If the father or the mother of a family is found to be tuberculous, it is the business of the social worker to get hold of the children of that family and to have them examined at the hospital, no matter how healthy they may feel themselves to be. In this way a good many cases of incipient tuberculosis may be nipped in the bud. The same is true with syphilis, though the activities for checking the spread of syphilitic infection within families and within neighborhoods are as yet in their infancy. We have one worker in our syphilis clinic whose chief duties are in this field. In connection with such duties it is her privilege to teach prevention as well as to check the spread of the disease.

The hospital begins in a satisfactory way the work of attending to such patients. It makes the diagnosis and states what should be done, but it does not finish the job. It does not see that its treatment is carried out; it does not see that the patient has the necessary weapons—mental, moral, and financial—which are needed to carry it out. It does not send out scouts to detect the enemy while he is still in the distance, in the home, school, or factory.

DRUG HABITS.

From among the innumerable cases of alcoholism and morphine habit seen in all large clinics, it is the business of the social worker to select the relatively small number which are still in a curable stage, and to bring to bear on their troubles such resources as the community contains. These resources may be institutional, personal, financial, religious. I am under no illusions regarding the difficulty of attacking such habits. I know well that under the conditions in which we meet them in hospital work we can seldom accomplish anything with our present knowledge and our present resources. But we must search for the early and curable cases as the surgeon searches for early and curable cases of cancer.

CARDIAC DISEASE.

Most hospitals are alert and interested in the diagnosis of heart troubles and in their treatment so long as they are in the acute stage; but the hospital, as a rule, leaves its job unfinished in this as in most other diseases. What happens to the child with rheumatic heart disease after he leaves our wards, or after his mother takes him home from the out-patient department with the diagnosis and a bottle of medicine? As a rule no one knows, and therefore no one cares. Yet the whole future life of that child may depend on his being guarded for months from overexertion and from hygienic errors such as favor the reinfection of his heart. We have one worker whose duty it is to follow cardiac cases to their homes, to explain and

illustrate in detail the restraints and precautions which are necessary if the child is to escape repeated attacks of cardiac infection.

The industrial future of such children is hopeless unless they are given special educational opportunities. They must learn some trade which can be carried out without severe muscular exertion. In later life it will be impossible to teach them such a trade, and, if they once get started on work requiring muscular effort, it may be impossible to switch them into any more suitable work.

SEX PROBLEMS.

People have talked so much and so unwisely of these matters in the last few years, that I shall say very little. It must be obvious to anyone who knows anything of hospital work that such problems are constantly arising in connection with those who are treated in hospitals. It must be equally obvious that we are not doing anything of any importance to deal with these problems, and that the physicians and nurses are unfitted, both by their training and their other duties, for any such work. Clearly the good work which the hospital has begun when it makes a diagnosis of venereal disease or of pregnancy in an unmarried woman must be finished up in part by social workers.

SICK BABIES AND THEIR MOTHERS.

It needs very little argument to see that a pediatric clinic which has no means of inspecting and regulating the home care of children is an especially striking example of a good job well begun, but left in the middle. Almost all our better pediatric clinics now have nurses or social workers attached to them, and the difficulty is that where such work is done by a nurse she very seldom gets beyond the purely medical aspects of the problem. She seldom appreciates that the baby's diet may be improper, not only from the mother's ignorance, but from the father's lack of employment, or from one or another family problem such as can be understood only by those who are accustomed to study the history and fortune of the family in all its members.

THE REEDUCATION OF THE NEURASTHENIC.

The hospital makes the diagnosis, but, as a rule, it does nothing more for neurasthenics. The conditions under which help can be given to such sufferers are not the conditions to be found in hospital clinics. One needs time, privacy, intimate acquaintance with the individual and his family, before anything can be accomplished. It is not a medical job. Medicine and surgery have no considerable part in it. Of course, general hygiene is of importance, but any social worker can learn and apply the simple rules which make up almost the whole of the specifically medical-hygienic treatment of such cases. Beyond that the treatment of the neurasthenic is a problem of personality, which no one profession is adequate to solve, but which the social worker can often deal with far more successfully than the physician or nurse. The neurasthenic must work, and the problems of occupation are the daily study of the social worker, not only in neurasthenics, but in all sorts of people. The problems of recreation, of affection and family life, of religious life, are also most familiar to the social worker and most unfamiliar, as a rule, to the hospital physician and nurse. There is no class of sufferers for whom more can be accomplished than these neurasthenics. Organic disease of the heart, lung, liver, kidney, or stomach presents itself at a hospital ordinarily in forms for which we can do very little. We can only patch up the sufferer; we cannot put him back into the industrial world. Many a neurasthenic, on the other hand, who is totally disabled by his sufferings can be really put upon his feet again and restored to happiness and to usefulness, if not to complete health. All this, however, can be accomplished only when a great deal of time can be given to a few sufferers, and when all the aspects of the sufferer's life, not merely its medical aspects, are sympathetically studied and dealt with.

PARALLELISM BETWEEN THE X-RAY DEPARTMENT AND THE SOCIAL SERVICE DEPARTMENT OF A HOSPITAL.

The x-ray department exists in order to assist in the diagnosis and treatment of disease. To it are delegated certain portions both in the investigation and in the management of disease—portions with which the physician and the nurse are not able to deal. Without an x-ray department a modern hospital is seriously incomplete. All of this is clearly true of a social service department, as I have been exemplifying in previous paragraphs. What I wish just now to emphasize is this: a social service department should be no more independent of the medical than the x-ray department. In most hospitals at the present time, when the doctor refers a patient to the social service department, he washes his hands of that patient and loses interest in him. But when he refers a patient to the x-ray department, he inquires next day what they have found and what they advise. The physician has no idea of turning over the patient wholly to the x-ray department. He wants the advice and assistance of that department, but he fully intends to correlate the data so obtained with what he himself knows and plans for the patient. So it should be with social service work. The physician should use the social service department as he uses the x-ray department—to assist him in the diagnosis and treatment of his cases—but he should always keep control of the patient and direct the investigations even where he is unable to attend to them personally. Unless this is so, the work of the social service department is largely wasted, for I cannot too often emphasize that the work of this department is a part of the medical work, and not a separate undertaking. We physicians know how serious are the mistakes which arise if the x-ray department undertakes to make its diagnoses and recommend treatment, unguided and unassisted by the physicians and surgeons of the hospital. X-ray data and social data are of the greatest importance only if they are correlated with the other facts of the patient's history and physical examination. Without that they are often useless. It is a doctor's business to familiarize himself with the social facts and to use them. Otherwise the money spent in the salaries of social workers is wasted.

SUPERFICIALITY OF SOCIAL SERVICE WITHOUT MEDICAL LEADERSHIP.

Physicians and nurses are very familiar with the fact that one cannot understand the heart without knowing what is going on in the brain, stomach, and kidneys. The interdependence of all these organs is a matter of course. Because there is a similar interdependence between the data obtained by history, by physical examination, by x-ray work, by exploratory operation, and the data obtained from the studies of social workers who follow up the patient's life both on the physical side and in the home, we get superficial and unsatisfactory results from hospital social service work unless the doctor and the social worker are in constant touch with each other about the individual cases day by day. Since Darwin's time no man of science expects to understand an individual without understanding his environment, but in hospital work we see a great deal of the individual and very little of the

environment. All that we learn of the latter comes from the rather unsatisfactory replies of the sick man and his worried friends. But we are limited in our study of patients in hospital wards not only by our ignorance of their environment, but by our very considerable ignorance of their mentality. The hospital routine is well calculated to obtain all the accessible knowledge of the patient's physique and physical history, but the mental aspect of his stomach trouble, his lung trouble, his intestinal trouble, as well as of his obviously nervous maladies, can rarely be understood when the patient is isolated from his ordinary surroundings and habits, and pinioned in a hospital bed. He shows often as little of his normal mental activities as an animal in confinement or a prisoner behind the bars.

In order to understand a hospital patient's disease we should know:

1. The individual
   - (a) Physically
     - Organs and functions.
     - Habits.
   - (b) Mentally
     - Habits.
     - Interests.
     - Abilities.
     - Fears, worries, etc.
2. His environment
   - (a) Physically
     - Food and clothes.
     - Housing.
     - Work conditions.
     - School conditions.
     - Income and outgo.
   - (b) Mentally
     - Family and friends.
     - Workmates.
     - Schoolmates.
     - Recreation.
     - Religion.

But in practice we know only a quarter of this—his physical organs, functions, and habits. In order to get any considerable portion of the knowledge which we need if we are to understand him and treat him properly, we must investigate his mentality and his mental and physical environment through the help of social workers, and, when it comes to treatment, we must modify his mentality, his physical and mental environment, as well as the conditions of his organs and tissues; else the money subscribed by private or public agencies and the labors of physicians and nurses are expended in many cases with no adequate or proportional result.

SUMMARY AND CONCLUSION.

The social worker is of value as a member of a team—as a cog in the hospital machinery—not as a separate extramural institution or as an independent entity. She is likely to do fully as much harm as good unless the physicians of the hospital themselves supervise her, lead her, lay out for her the work she is to do and inspect it. Like the laboratory man and the x-ray expert, she should be under the direction of the hospital staff, reporting to the staff, and guided both in her investigations and in her remedial efforts by that staff.

Dr. G. K. Binkley, of Orwigsburg, Pa., has approved plans for a general hospital he is to erect at Schuylkill Haven, Pa. The hospital will eventually comprise five fireproof buildings of the bungalow type, but only one of these structures, costing $25,000, will be erected at this time. Dr. Binkley has announced that at his death the institution is to become the property of the Southern Schuylkill Medical Society, of which he is president.

A $60,000 bond issue has been ordered by the city of Buffalo, N. Y., for improvements at the J. N. Adams Hospital.

"Conference of Charities" to Discuss Medical Topics

The National Conference of Charities and Correction will hold its forty-second annual meeting at Baltimore, Md., May 12th to 19th. On the program are the names of many of the leading charity workers and penologists of the country, including Prof. Henry R. Saeger, of Columbia University, who will give an address on "Causes and Remedies of Unemployment." Dr. Richard C. Cabot, of Boston, will preside as chairman of the section on "Health" and the program of this section will include a series of discussions on the social responsibilities of the hospital and practical methods of social work in connection with hospitals. The chief speaker will be Dr. William H. Welch, of Johns Hopkins Hospital. Other speakers on the program will be Dr. Charles P. Emerson, dean of the Indiana University Medical School; Dr. Katherine Bement David, Commissioner of Correction of the City of New York; Dr. Walter E. Fernald, superintendent of the Massachusetts School for Feeble-Minded; and Dr. Martin W. Barr, superintendent of the Pennsylvania School for the Feeble-Minded.

The meeting will be held under the presidency of Mrs. John H. Glenn, of New York, the second woman president it has ever had.

Twilight Sleep

The City Hospital of St. Louis, Mo., will try out "twilight sleep" in its maternity wards.

The Michael Reese Hospital, Chicago, Ill., after a series of forty tests, has announced that they will apply "twilight sleep" only with the written consent of the mother, in which she absolves the hospital from any responsibility of injury to either herself or child.

The reason given for this precautionary measure is that the Michael Reese staff has already tried twilight sleep exactly in accord with the Freiburg method in over forty cases and is not impressed with its desirability.

Let us remind ourselves once more that it is the little things that count. The worst surgery in the world can be done in a hospital and the noisy element of the public will know little about it and care less; but if you serve bad meals, even to free patients, or have dirty sheets on the beds, there will be a howl the echo of which will come back to you from some telling quarter. A clean house, neat beds, a few rugs and flowers in cozy nooks where patients and their friends may visit, and well prepared and promptly served meals, have frequently been assets that have made for success in hospitals whose ideals in the practice of medicine have been obsolete for half a century. Look to the little things.

Just because your medical men seem to be getting along without much, if any, scientific work, doesn't excuse you from insisting upon it. A good hospital administrator will inspire the staff to do the best work of which they are capable, and will often suggest little schemes of helpfulness. The young, well-trained men who have recently come out of internship in a good hospital, and who are hanging around the institution hungry and begging for work, will always be glad to help the older men; and, inspired by your own spirit of progress, energy, and push, younger and older men working together can often raise an institution out of the doldrums, and make of it an up-and-going concern. Rally your forces and lead the fight; there will be followers into the fray.

Funds have been raised at Miami, Fla., for a new city hospital.

CURRENT HOSPITAL LITERATURE

Albert Allemann, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Frank B. Martin, Domestic Literature.
Army Medical Museum and Library, Office of the Surgeon-General U. S. Army.

Value of External Heat to Ill Babies. Guy's Hospital Gaz., Lond., 1914, September 12.

A method of maintaining external warmth of a baby whilst allowing it fresh air to breathe is now adopted in Guy's Hospital. A blanket covers the infant to the neck. The face is exposed to the ordinary fresh air of the ward. A small cradle being placed outside the blanket covering the child's body, within the cradle are hung some ordinary electric lights. The cradle is covered with one or more blankets, which are well tucked in around the bed. The electric switch is turned on, and the temperature within the cradle watched by means of a thermometer. This treatment is most beneficial in marasmus, diarrhœa, vomiting with a tendency to collapse, ordinary bronchitis without high fever, and in many other similar conditions. The heat loss prevented by it does much to hasten recovery of the patient. This treatment is contraindicated in conditions of high fever.

An Institution of Social Aid. The Obstetrical Service in Rome (Una istituzione di assistenza sociale. La guardia ostetrica di Roma). Rivista ospedal., Roma, 1914, V, No. 10.

This service was organized in 1907 by Dr. Pestalozza, director of the Royal Obstetrico-Gynecological Clinic. The means were provided by the queen dowager and some benevolent organizations in Rome. The institution is intended to assist poor women who are in expectation of childbirth. These women call at the obstetrical clinic before the time of delivery. They are examined by an experienced obstetrician and if the conditions indicate a normal birth the woman is sent home with the understanding that she will receive proper attention by the obstetrical service. If the conditions indicate an abnormal birth the woman is directed to the lying-in hospital. In the great majority of cases the women can be sent to their homes, where they receive due care and attention by the Service. A midwife living in the neighborhood of such a woman is assigned to her and if the woman has any other children they are taken care of. When labor approaches the Service is notified, which then sends an obstetrician to attend the woman. During the six years ending with December, 1913, 6,966 women were thus delivered at their homes and 4,820 were cared for at the lying-in hospital.

The Hospital at Medebach (Das Krankenhaus zu Medebach). Heilanstalt, Leipzig, 1914, X, No. 48.

Medebach is a town of 2,500 inhabitants. The architect had to solve the problem of building a hospital with twenty-eight beds and an isolation ward with six beds at the lowest possible cost. Considering that all the building material had to be brought by rail from a great distance, he did well in his task, as the total building expenses amount to only Mk. 103,500 ($25,625). The ground plan has the form of a T. The main front with the sickrooms is on the south side of the building, and the operation and other additional rooms are on the north side. The main entrance is on the north front. To the right of the entrance is a first aid room, to the left, separated by a small anteroom, the kitchen and storerooms. The first story contains also the rooms for medical baths. In the basement is the central heating plant, laundry, etc. The second and third stories contain the sickrooms ranged along the south front. On the north side of the second floor is the operation room, an x-ray room, elevator, closets, etc. The north side of the third floor contains a chapel, and a hall and dining room for the nurses. The nurses' rooms are in the attic. The isolation ward is attached to the main building on the west side and has its own entrance.

On Sewage Disinfection, System Braun (Ueber Abwasser-Desinfektion, System Braun). By W. Bach, Archit. Heilanstalt, Leipzig, 1914, IX, No. 22.

The war has greatly increased the danger from infectious diseases. The disinfection of sewage from hospitals, especially where the latter is carried into public watercourses, is therefore of great importance. Dunbar has shown that the pathogenic organisms are not killed by a biological purification, though their vitality is weakened by the destruction of the mucous envelope. To prevent the dissemination of typhoid, dysentery, cholera, etc., by hospital sewage, an efficient system of disinfection must be employed. The best and at the same time the cheapest means of disinfection is chlorate of lime, containing 30 to 33 percent of active chlorine. This has been proved by the experiments of Phelps in Boston and Clark and Gage in Lawrence, Mass. That even very small quantities of chlorate of lime produce sterilization has been shown by the experiments made at the disinfection plant in Philadelphia in 1913. But as the sewage flows off very irregularly it is difficult to mix properly at all times the necessary quantity of the disinfecting agent with the sewage. Architect Braun, in Ulm, has now constructed a mixing apparatus which is thoroughly efficient. This apparatus consists in a collecting tank holding about twenty gallons. As the sewage gradually fills this tank the disinfecting fluid is mixed with it drop by drop. A floating device regulates the escape of the disinfectant. As soon as the tank is full it empties itself automatically and is then ready to receive another quantity of sewage.

Hospitals in the Middle Ages (Krankenhäuser in Mittelalter). Dr. C. Haendecke. Deutsche Krankenpfl.-Zeitung, Berl., 1914, XVII, No. 20.

One of the chief merits of the Middle Ages was the recognition of the fact that it is the moral duty of man to assist poor and sick members of human society. It is therefore natural that the church should consider this one of her special fields. The church spirit predominated in the hospitals of those times and the care of the soul was thought more important than that of the body. The most common form of these institutions were the Holy Ghost Hospitals, in France called Hotel-Dieu. All sick people were received in these hospitals except lepers, plague patients, cripples, blind people and lying-in women. Not until much later were hospitals established for lying-in women, blind persons and abandoned children. But there were also many old men and women of means who passed

the last years of their lives in hospitals, where they were taken care of, and to which they usually willed their property. Most hospitals were supported by such donations and other benevolent gifts. All hospitals had regular attending physicians and nurses. The statutes of the Hotel Dieu at Paris of the year 1217 give us a good idea of the organization of these hospitals. These statutes are very similar to those of the Knights Templar. The personnel of the hospital comprised thirty lay brothers, four clericals, four presbyters, and twenty-five lay sisters. They all had to take the vow of chastity, obedience and poverty.

The Best Training for the Hospital Corps for the Fleet. F. E. McCullough, Surgeon, U. S. Navy. Mil. Surgeon, Chicago, January, 1915.

The importance of academic and vocational training in the navy, as emphasized by Secretary Daniels, made it possible to evolve and establish a system for training the hospital corps of the navy, which is producing excellent results. As the writer states, while it is by no means new in the navy, vocational training is an expansion of a successful system of training that has existed at the naval academy to qualify officers of the line. A systematic course of instruction was already in effect as prescribed by general order. A training school at the Norfolk Naval Hospital was established in 1901, and removed to Washington in 1903, but was discontinued when the general order (requiring instruction at all hospitals, and on all larger ships) was issued. The training school for the hospital corps of the navy was established during the present year at the Naval Training Station, Newport, R. I., and experience has already demonstrated that no error of judgment was made in this selection. The ultimate and primary object of this training is to equip membership for duty with the fleet. The school is provided with all necessary equipment, and the curriculum as shown by its prospectus will include lectures upon anatomy and physiology, first-aid and emergency surgery, hygiene and sanitation, clerical duties, pharmacy, chemistry, materia medica and the action of drugs, toxicology, foods and cooking, litter and stretcher drill, and tent erection. The course will last six months. It is believed that the training school for the hospital corps of the navy established by the department, together with the instruction given by medical officers and the senior members of the hospital corps at naval hospitals and ships, will provide the best training for the hospital corps of the navy and that this corps, for many years noted for its efficiency, will maintain its high place among the naval services of the world.

Female Nurses in the Navy. Mary E. Smith. The Nurse, Jamestown, N. Y., 1915, II, 94.

In 1908 Congress authorized the formation of the Female Nurse Corps of the U. S. Navy. It consists of a superintendent of nurses, chief nurse, nurses and reserve nurses. They do not serve upon fighting ships, but render service in naval hospitals and in emergency in case of war upon hospital or ambulance ships. The regularity of institutional nursing with the possibility of travel, variety and advancement are advantages the corps offers. Other perquisites are that nurses' homes have been built at nearly all the hospitals, and they are thus insured comfort and privacy. They may be granted thirty days' leave with pay during each calendar year, or the leave may accumulate for three years. Applications are made to the Surgeon General, Navy Department, Washington, D. C. An applicant must be a graduate of a general hospital training school giving a course of instruction covering at least a period of two years. Appointments are for three years, after which, if desired, nurses are ordered home and expenses paid. A nurse usually serves at one of the large naval hospitals in this country, receiving the special instruction necessary for nursing in the navy. A day's duty is considered to be eight hours. At present there are built, or in course of construction, modern naval hospitals at Portsmouth, Chelsea, Newport, Brooklyn, Philadelphia, Annapolis, Washington, Norfolk, Mare Island, Bremerton, North Chicago, Honolulu, Cavite and Yokohama. These hospitals rank with the best in the world. Not all of them have resident women nurses, but they may be assigned to any of them by order of the Surgeon General, and nurses are detailed wherever they are needed.

The Care of the Sick in Modern Times (Zur heutigen Krankenversorgung). Dr. Naunyn. Deutsche Revue, Stuttgart, 1914, II, pp. 310-319.

The development of modern hospital construction and hospital service in Germany began about fifty years ago and has steadily progressed. In 1865 the hospitals of Berlin contained about 1,500 beds, or 22 beds for every 10,000 inhabitants. In 1910 Berlin had 52 beds for the same number of inhabitants. In those days the hospitals were intended to receive only people of small means. The wealthy people could not avail themselves of the services of a hospital and had to content themselves with home treatment, which is done, of course, under great disadvantages. For this reason a great number of private hospitals and sanatoriums sprang up. In those early days the people had still much prejudice against the hospitals, but a great change came about, when at the end of the seventies antiseptic surgery became general, and the terrors of an operation were no longer to be feared. As the antiseptic method could not properly be carried out at home the surgeons took their patients to the hospitals. Thus commenced the great era of modern hospital construction. The cities began to vie with each other in the establishment of luxurious and splendidly equipped hospitals. How the prejudices against the hospitals have disappeared is best shown by the fact that the married women of the wealthy classes go now to the hospital for childbirth. It is not necessary to dwell on the advantages of a hospital in operative and labor cases, but the hospital is also indispensable in a great number of special methods of treatment. In acute and especially infectious diseases the hospital presents great advantages over home treatment. The question of expenses is important. If we consider the salary of the nurse, the pay of a physician, the expenses for food, drugs, etc., the costs of the home treatment will under the most favorable circumstances amount to 15 or 20 marks per day. This amount may easily be doubled if a night nurse and special methods of treatment are required. The rates in hospitals vary greatly, but the expenses are in all cases much less than those of home treatment.

A Field Hospital in Belgium. J. H. Beavis and H. S. Souttar. Brit. M. J., Lond., 1915, I, 64.

The authors, who for the past three months have rendered service in a hospital within a few miles of the firing line, furnish interesting cases of surgery under such conditions. The British Field Hospital for Belgium began its work in Antwerp with a well-equipped hospital of 150 beds and a staff of 8 doctors, 20 nurses, and 5 dressers. In five weeks 500 Belgians and 70 British were admitted to its wards, in addition to a large number of slighter cases treated and sent on to other hospitals. On October 8, 1914, in view of the German occupation, the hospital had to leave Antwerp.

After a week in London to refit, a fresh start was made

at Furnes, where the hospital is still at work, acting as the official field hospital of the Belgian army. The hospital is established in the large Episcopal College of St. Joseph. It has accommodation for about 100 patients, although by the use of straw wards there have been housed as many as 150 on more than one occasion. The military authorities visit the wards daily and transfer to base hospitals at Calais and Dunkirk every patient who can be moved. The turnover is therefore very large, and has reached as many as 100 in one day. These evacuation arrangements enable the hospital to deal with a very large number of patients, though they make it somewhat difficult to follow any but a few special cases throughout their course.

It will thus be seen that the hospital has enjoyed all the advantages, and some of the dangers, of a well-equipped establishment close behind the fighting lines. It has also the immense advantage of a fleet of motor ambulances to bring the wounded direct from the trenches. An ambulance corps works in conjunction with the hospital, and brings the wounded in with the least possible delay. Most cases are received within the first twenty-four hours and in some instances they have reached the field hospital in less than an hour from the time of injury. There can be few hospitals so fortunately placed.

Lahasusu and Its Hospital. North Manchurian Plague Prevention Service Reports, 1911-1913. Cambridge, 1914, 136.

The director of the hospital and Dr. C. H. Luk Chun Hsuan furnish an interesting article on the village of Lahasusu (Lt. 47° 42′ N.; Lg. 132° 0′ E.). Lahasusu is situated on the southern or right bank of the River Sungari, about three miles before it winds round to join the Amur. Hence it is an important customs station for the Chinese Government, watching trading vessels, Chinese and Russian, plying on the river between Harbin and Blagovestchensk on one side, and Habarovsk on the other. The distance of Lahasusu from Harbin is 450 miles or 630 versts.

Lahasusu is so called from a name given to the place by some Fish-Skin Tartars, known locally by the name of Ho Che in Chinese or "goldi" in Russian, who settled here about the beginning of the Ta Ching Dynasty. "Laha" means straw-and-mud, and "susu" means a camp.

When it was decided to establish Plague Prevention Stations in North Manchuria in order to prevent a recurrence of an epidemic like that of 1910-1911, Lahasusu was one of five chosen, although it had never been visited by the plague. The main reason lies in the fact that it is an important calling station lying at the junction of the Amur and Sungari. In April, 1911, the Chinese and Russian authorities agreed to send medical expeditions conjointly to the Sungari and Amur regions to inquire into the existence of plague, and incidentally to enforce quarantine restrictions on vessels plying along those rivers. As a result the customs commissioner, after consultation with the Wai Wu Pu, despatched Dr. W. Kirk to Lahasusu to examine the vessels calling at that place, and the Russian railway authorities were invited to cooperate in this work. The latter, therefore, despatched a steamer to Lahasusu, fitted up as a hospital-ship, in charge of a medical man and two women nurses, in order to guard against the possible spread of infection into Russian territory lying further east. Plans were at the same time made for the construction of an isolation hospital at Lahasusu, and the sum of Rs. 20,000 was voted for the purpose by the viceroy of Manchuria, with the approval of Wai Wu Pu, the money to come from the Harbin customs revenue.

The site was chosen after consultation with the prefect, Mr. Chu Shou Ching, who bought the land, measuring about ten mu, for Rs. 682.58. The site is a good one, being on high ground at the curve of the Sungari before it joins the Amur, and two-thirds of a mile distant from the village. Dr. Kirk superintended the building operations, and Dr. C. H. Luk was appointed as his assistant after Dr. Young (of Canton) had left.

In June, 1911, the Chinese and Russian governments rescinded the quarantine regulations in force on the frontier between China and Russia, and the Russian hospital staff, who had been living on their ship, therefore left Lahasusu about June 15.

The hospital consists of:

(a) A two-storied block in the center for the medical officer. There are sixteen windows (all double); on the ground floor are four rooms, a dispensary, a waiting room, a consulting room and a laboratory; the top floor is divided into four rooms for the private use of the medical officer. The servants' quarters, consisting of a small block of four rooms, lie immediately behind the medical officer's quarters.

(b) Behind and on the western side are two blocks, one for plague cases and one for "suspect" cases. Each block contains twelve compartments, each eight by twelve, with a side corridor. These compartments are separated from one another by wooden partitions six feet high. Each compartment has a separate double window, so that there is abundance of light. Both the plague and "suspect" wards are built alike.

(c) On the eastern side are two more blocks for quarrantine purposes. These are almost square buildings, each with two doors and twelve windows. Each block is divided into two large wards with a passage in the middle. Each ward accommodates ten persons. All the buildings have plank floors. The following table indicates the measurements:

	Doctor's Residence.	Plague and Suspect Blocks (each).	Quarantine Blocks (each).
Length in feet	32	69	34½
Breadth in feet	28	21¼	32
Number of wards	8 rooms	12 rooms	2
Size of each ward	..	5½x11½ ft.	11½x26 ft.
Number of windows	16	12	12

The hospital is perhaps the finest and most prominent building at Lahasusu, and commands a fine view of the two rivers—Sungari and Amur. Vessels going to and from Lahasusu pass it before reaching the village.

The New Dietary in the Spedale Maggiore of Bologna (Le nuove diete nello Spedale Maggiore di Bologna). G. Vannini. Bulletino d. scienze med., Bologna, 1914, LXXXV, No. 9.

The food of hospital patients has of late years been the subject of numerous investigations in Italy. As patients frequently complain about the diet, Dr. Masetti, director of the Bologna hospital, has arranged a new diet table. He aimed especially at satisfying the patients who frequently crave foods not provided by the ordinary hospital dietary. He substituted veal for a part of the beef, and introduced new ways of preparing the food in order to make it more palatable to the patients. Special attention is paid to a good, clean milk. Immediately after it is milked it is sterilized in copper vessels provided with a special spigot. The covered cans are carried to the various wards and the milk drawn, by means of the spigot, into sterilized pint bottles provided with a glass cover. The article is accompanied by complete diet tables. Table III shows the chemical composition of the various foods, their combustion value and their proteid, fat and hydrocarbon contents.

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DEPARTMENT *of* NURSING

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Annual Convention of the American Nurses' Association

The American Nurses' Association will hold its eighteenth annual convention in San Francisco, June 20-26, 1915. With this association are affiliated the National League of Nursing Education and the National Organization for Public Health Nursing, the three associations representing a membership of more than 25,000 nurses. The convention week will be opened by a special Sunday evening session, at which Dr. Aked will preach to the nurses assembled. Registration, important business meetings and a formal joint opening session will mark the proceedings for Monday. The four following days will be devoted to papers, discussions, sectional conferences and round tables, at which the problems of the three different bodies will be considered, sometimes in separate sessions, sometimes in large joint meetings. The program is not yet in its final form, but it promises to be of great interest and advantage to all. It is hoped that as the convention is held at the same time as those of the American Medical Association and the American Hospital Association, many nurse superintendents of hospitals can be present who could not otherwise attend two conventions, and that many nurses who are wives of physicians may attend the nursing meetings while their husbands are engrossed by their own duties. Then, too, the dates, late in June, will make it possible for vacations to be planned to include the convention and the Exposition.

This was the appointed year for the meeting of the International Council of Nurses, of which the American Nurses' Association is a part, but all plans for an international gathering have had to be laid aside on account of the war.

Two or three special nurses' trains will carry the delegates to the coast, one with interesting side trips, the others taking a more direct route. The outlook for a good attendance and for inspiring meetings is a hopeful one.

KATHARINE DEWITT, R. N., Secretary.

The Modern Hospital as an Educational Center.

BY HELEN LILLIAN BRIDGE, R. N.

Assistant Superintendent of Nurses, Department of Nursing and Social Service, Washington University, St. Louis.

PAPER I.

It will perhaps seem unusual to some of the laity to consider the hospital in any other light than as an institution for the care of the sick. However, the thought of it as an educational center should be strange to no one, since within the walls of the hospital is found the modern school of nursing. The student nurses are concerned primarily with the care of the sick, but one of the most important duties of the school is to educate nurses so they

will be qualified to do the work that the future of preventive medicine demands.

The modern hospital, with its marvelous equipment, furnishes unusual opportunities for the education and training of the nurse of today. This is fortunate, since more and more nurses are being sought to fill positions as public health workers, and it is predicted by those who have an intimate knowledge of these affairs that the scope of work in this field will be constantly broadened. With this prediction also comes the complaint that the technical education of the nurse is not sufficiently sound. With this criticism in mind, it behooves the training school to develop its scheme of education to the point where it will be able to give to its students the thorough education that the nursing work of the future requires.

It is the idea of this paper to describe the type of work done in one school—not that it is thought the system is ideal, but because it is believed that the scheme has several good points.

The setting of a school is an important thing to consider. While all nurses realize that good schools frequently exist in poor buildings and where there is a lack of proper equipment, yet the better these are the greater are the chances for the development of a good school. This, of course, is only true if other things are equal.

The nursing in the new Barnes and St. Louis Children's Hospital is to be done by the department of nursing and social service of Washington University, under external conditions that approach the ideal. The buildings of these institutions, wonderfully located on the edge of Forest Park, are completely equipped and modern in all of their details. In these should be found an excellent opportunity for establishing a school of nursing on a firm educational basis.

In the children's hospital proper 100 beds are allotted to the care of infants and children. In a separate building are 40 beds for the care of contagious diseases. This building has been carefully planned, so that the work can be carried on with the greatest possible efficiency. An interesting feature in connection with the children's hospital is that in both of its divisions provision has been made for the care of private patients. In addition to this, and under the management of the same board, there is a beautiful convalescent home with 50 beds at Valley Park. This is about twenty miles out of the city, on top of a high hill, overlooking the Meramec river valley. For several years past convalescents have been sent out to the old house and have been wonderfully improved by their stay on the farm.

In the Barnes Hospital provision has been made for the maintenance of a general service. The private patients' pavilion has 45 beds, with the majority of its rooms overlooking the park. In addition to these there are 200 beds allotted to the surgical, medical, gynecological, and obstetrical services. For the present some of the beds in the surgical pavilion will be given over to the care of diseases of the special senses. On the corner of the block stand two eight-room houses which were to be torn down, but, since the provisions of the will which made the new buildings possible permits the admission of white patients only, the houses are to be used for the care of sick negroes. A building to be devoted to the housing of colored patients is soon to be erected and will be arranged to provide adequately for the different services.

In the main building are located well equipped examining and admitting rooms and divisions for mechano- and hydrotherapy, metabolism, and x-ray. The group of buildings, as it stands at present, is completed by that of the out-patient department. Here will be combined the dispensary work of the Barnes and children's hospitals. At present the average number of patients treated daily in the two dispensaries is about 250.

Appreciating the advantages in equipment and buildings, the faculty of the school of nursing has planned a careful course of study which it is hoped will prove efficient. Changes could be made in it which would bring the plan nearer to the ideal, but they must wait until certain fundamental things have been accomplished. The school year has been divided into two semesters, and the work planned out according to the following scheme:

JUNIORS.

First Semester.	Hours.	Second Semester.	Hours.
Practical nursing	90	Practical nursing	15
Anatomy	30	Physiology	30
Solutions	12	Dietetics	30
Drugs	15	English	15
Personal hygiene	12	Bandaging	10
Bacteriology	30	Urinalysis	6
Chemistry	30		
English	15		

INTERMEDIATES.

First Semester.	Hours.	Second Semester.	Hours.
Practical nursing	15	Practical nursing	15
General surgery	10	General medicine	10
Gynecology	5	Pediatrics	10
Pathology	5	Contagious diseases of children	3
Materia medica	15	Orthopedics	4
Massage and corrective gymnastics	15	Obstetrics	15
English	15	English	15

SENIORS.

First Semester.	Hours.	Second Semester.	Hours.
History of nursing and nursing ethics	15	History of nursing contemporaneous problems	15
English	15	English	15
Diseases of the special senses (eye, ear, skin, nose, and throat)	15	Diseases of the nervous system	6
Visiting nursing	4	Special lectures — field work in visiting nursing and social service.	
Social service	4		

For several reasons it has not been found possible to follow out this plan in all of its details. One of these is that it was planned to move the training school and medical school into the new buildings before the opening of the school year, and only the latter was moved. As a result it was impossible to carry on regular laboratory courses, and a great deal of the material the lecturers expected to use was unavailable. A second reason is that it was found necessary to receive the autumn class in small sections, and in consequence a large portion of the theoretical work has been irregular. In the future, however, it is hoped and expected that the course of study will be realized as planned and little by little improved. The instruction of the nurses is given by members of the faculties of the medical and training schools. In bacteriology, chemistry, and dietetics, regular lecture and laboratory periods will be given. The latter will be held in the laboratories of the medical school, which are located directly opposite the hospital buildings. These periods will be conducted by members of the medical school faculty. In anatomy a lecture, accompanied by a demonstration of materials from the dissecting laboratory of the medical school, is given, and followed by a quiz. The same general plan is followed in physiology, in which course it is hoped a great many interesting and valuable experiments will be demonstrated. For the study of the history of nursing no formal class will be formed. It is desired that the students outline and conduct the class for themselves, with some help from one of the members of the training school staff. Under the heading of special lectures will be taken up such subjects as deal directly with the work of the public departments

and private agencies for the betterment of living conditions. For these lectures it has been planned to bring the students of three schools together and to invite both lay and professional social workers to attend.

While a great deal of theoretical work has been required of the students, it has been found possible to give them ample time off duty for rest and study. Each nurse has three hours off duty daily, one-half day during the week, beginning at 1:30 p. m., and five and one-half hours on Sunday. In addition to this they usually have their class hour as well as their three hours off duty.

At present there is no preliminary course conducted in the school. It is believed that such a course is desirable both from the standpoint of the pupil and the school, and it is hoped that in the near future the work can be arranged in such a way that a preliminary course for probationers will be possible. Then it would seem advisable to give to the new students the largest portion of the theoretical work in the junior year, and have them do only such ward work as could be accredited as laboratory work in practical nursing.

One of the most interesting features of the work is the English courses offered. These classes are conducted by Dr. Sedgwick, of the department of English at Washington University. Course 1 is given to the junior class, and the first semester's work is devoted almost entirely to composition. In the second half of the year the same outline will be followed, and in addition the study of the modern short story will be taken up. The latter is designed to lead up to course 2, which is now being given to the members of the intermediate and senior classes. The aim of the second year's work is to develop an appreciation for better literature. Up to the present the work has been confined to the short story, although Dr. Sedgwick hopes soon to begin the study of the modern novel. When the course was first planned, $350 was set aside by the training school committee to cover the cost of instruction. When the character of the work to be pursued was discussed it was feared that it might be necessary to give up the original plan of forming a class in composition, because of the fact that each week forty or fifty themes must be corrected. But without hesitation the members of the committee came forward to say that the necessary money ($100) to pay a theme reader would be forthcoming. Then came a third question, that of books. But here again $50 was given to cover any necessary expenditure, making a total of $500 allowed for the teaching of English.

It is thought that this is an especially fine feature of the course given the students of this school, and one of the best things about it is the attitude of the pupils toward the work. In the beginning there were several complaints from nurses who thought they had had enough "baby English," but, when it was learned that the course was the equivalent of Freshman English, their attitude changed. Now they are thoroughly interested and are enjoying every minute of it. Another good feature of the class is that the nurses do not regard it as a burden, but look forward to the hour as one in which they will find relaxation and mental recreation. Additional books for this course are obtained from the traveling department of the Public Library.

Another interesting experiment under trial in this school is a week's work for probationers, under the direction of the social service workers. After the probationers have been in the school for about a month, they are sent to the social service department. The first day they go to the office, read reports and listen to conversations which take place there; then they are given a few simple instructions, and sent out to make calls, investigate cases, and write up the usual reports. They do this for a week. This plan is being pursued, not because it is expected that with such a short service they will learn to investigate a case thoroughly or to make a correct social diagnosis, but because it is believed that they will gain a new insight into the way in which a great many of their patients live and the great difficulties under which they labor. A large number of patients who come under observation in the hospital wards have a bad social environment, which is the great cause of their condition, and the week's experience should stimulate the imagination of the new nurse and make her more sympathetic and helpful than she would be otherwise.

A regular weekly class in singing has been inaugurated, primarily to provide rest and relaxation, and secondarily to prepare Christmas carols for singing in the wards. If the comments of the students can be trusted, they find the hour a very pleasant one.

To the above-mentioned classes another is soon to be added. Junior students will be enrolled in this one for instruction in corrective foot exercises. The class will be conducted by the resident masseuse, who is a graduate of the Posse School of Gymnastics and Massage. The necessity for such instruction was demonstrated by the orthopedic surgeon, who carefully examined the feet of all the new pupils. At his direction the class is to be divided into three sections, and the exercises will be carried out according to his instructions.

Suggestions for Laboratory Teaching of Anatomy in a Small School.

BY SUSIE A. WATSON, R. N.,
Instructor of Nurses, Peter Bent Brigham Hospital Training School for Nurses.

So much has been said and written during the last year or two about the laboratory method of teaching in the training schools that perhaps many of the small ones would like to bring it into more common practice if it could be done without much additional expense. Even a moderate sum seems large when the training school appropriation is scant. It is with such a school in mind that these suggestions for inexpensive work are made.

Besides money, another item to be considered in the small hospital is time. The staff may be small and teaching only one of many duties devolving upon the superintendent and her assistant. Everyone who uses this method admits that more time is required for careful preparation as well as for student supervision. The qualifications of the teacher may vary widely.

Anatomy is generally considered by pupils in training the most difficult subject, and yet by many it is held the most interesting. It is usually unlike the pupil's previous studies and the basis on which she may build may not be extensive. Therefore the opportunity to study for herself the organs about which she reads in her lesson will enable her to understand their workings better and extend this understanding by applying it to her own personal hygiene. The actual doing for herself is worth ten demonstrations by an instructor, because she carries away a more distinct memory of something in which she has been an actor rather than a mere spectator.

Microscopic work is worth much for studying tissues and structures of the body, but many schools have no microscopes, nor anyone with sufficient training to make their use an asset to the teaching. The student cannot remember what she has seen unless it has been clearly explained and she has had time enough to study the field,

and draw and name the parts. Under such conditions the study of and the copying of well selected pictures and diagrams would prove of greater value.

There is a wide range of material for selection in the meat market, and it is surprising how interested the butcher himself will become in saving good specimens if he is approached in the right way. The cost is trivial.

A painstaking student may follow written directions for dissection, aided by her anatomy text-book in identification without constant supervision, though her work must be frequently inspected and decisions verified.

Nearly every hospital possesses a skeleton. It has been found that making drawings of different bones is a valuable way of cultivating observation of details and remembering location and relation to other bones. An uncooked soup bone from the kitchen, split lengthwise, will give a good idea of the composition of a bone and the structure of a freely movable joint. The adhering parts will present examples of most of the tissues, which may be identified.

An examination of tripe and of the alimentary canal of a fowl will show the characteristic structure of the digestive tract, and tongue, liver, and pancreas are easy to obtain. The extent of the pupils' experiments in digestion may depend upon time, knowledge of physiological chemistry possessed by the instructor, and available material. At least salivary digestion may be easily proved because of the simplicity of starch and sugar tests and ready supply of saliva. It is more interesting than work with artificially made juices because more personal. Hawk's Physiological Chemistry gives directions for making artificial gastric and pancreatic juices; and somewhat less satisfactory results may be obtained from a combination of hydrochloric acid and pepsin in one case, and pancreatin in the other.

If a microscope can be obtained, examination of the pupil's own blood is interesting to her as well as important.

One can procure from the local butcher the heart and lungs of a sheep or calf, attached together with trachea, œsophagus and part of the diaphragm. These are apt to be mutilated by the meat inspector, unless they are ordered in advance and the purchaser's purpose is explained. However, they are seldom so damaged that one side at least of heart or lungs does not serve to demonstrate the action of the heart valves or filling of the lungs. Kidneys, too, are valuable to help make clear the complicated description in the text. One pupil, after she had dissected a split kidney, took great pleasure in making a clay model of one, wonderfully true to life. She did it outside of class hours, and solely because she wanted to show how well she understood the kidney from her laboratory work.

The butcher will split a calf's head with his cleaver so that the skull and brain may be examined. A dissection of the eyes of some animal will make clear the anatomy of the human eye, which, without this help, is confusing and easily forgotten. Frogs are not hard to get nor to dissect, and give a very good general idea of position of the organs in the body. Bigelow's Applied Biology offers many suggestions and directions for work which may be used to advantage.

The amount of equipment necessary depends upon the number of students at work at one time. A few articles may be used over and over by many students if the schedule is carefully arranged, and economy of storage space may be thus effected. For the work here outlined one can manage fairly well with newspapers for table covers, a few large white plates, two or three sharp paring knives instead of scalpels, ordinary scissors, and straws from a broom or culture sticks for probes. Dissecting forceps are desirable, though not absolutely necessary. Slides and cover slips should be on hand if a microscope were part of the equipment. Prepared slides of specimens, if desired, may be purchased from various supply houses at moderate cost. Two or three small funnels, filter paper, a saucepan, test tubes, which cost about thirty cents a dozen, and brushes, which cost about three cents apiece, will be needed. Pasteboard boxes may be used to stand the tubes in. Small glasses may be used in place of beakers. The reagents for the digestive experiments may be found in any hospital laboratory.

If other subjects are to be taught in the same manner a greater variety of apparatus will be needed for general laboratory use.

Urges Nurses to Know Experiences of Private Nursing.

The increasing importance of the intelligent nurse in the treatment of the sick was emphasized by Dr. Samuel Robinson, of Clifton Springs, who addressed the graduating class of Faxton Hospital Training School at the commencement exercises.

The real joy that they must have gained, he said, is in learning more of the whys of things rather than merely the why nots, as they have come toward the end of their hospital course. He pointed out that, while the nurse must be trained not to allow her curiosity to interfere with her work, yet the best nurse is always the one who has brains, and brains must know the reasons for things. Dr. Robinson declared that this curiosity to know the reason for treatment is commendable, particularly now that treatment is becoming more and more a matter of skillful management on the part of the nurse, who is entitled to know the reasons for what she is doing. "The best nurse knows the whys, but never becomes the doctor," declared Dr. Robinson, who urged the acquirement on the part of the nurse of a cooperative interest with the physician in the condition of the patient in order to be of the highest service to the doctor and to mankind.

Dr. Robinson warned against the danger of regarding graduation as the end of training for the profession of nursing, and said that the test of real work comes when, after some years of responsible practice, the nurse is willing to go back for post-graduate work in order to keep up to date with her profession. Particularly did Dr. Robinson urge the nurses not to cling indefinitely to hospital positions as the line of least resistance. He emphasized the importance of gaining self-reliance through the valuable training found in caring for the sick in their own homes under the scrutiny of anxious families. The ability thus gained by a nurse to maintain a tolerant equilibrium and to show a ready adaptability will win the respect and confidence of strangers among whom she may work.

Oliver Wendell Holmes' lines to the physician would seem equally applicable to the nurse:

> "And last, not least, in each perplexing case
> Learn the sweet magic of a cheerful face,
> Not always smiling, but at least serene.
> When grief and anguish cloud the anxious scene,
> Each look, each movement, every word and tone
> Should tell the sufferer you are all his own.
> Not the mere hireling, purchased to attend,
> But the warm, ready, self-supporting friend
> Whose genial presence in itself combines
> The best of tonics, cordials, anodynes."

A total expenditure of $500,000 has been authorized for the municipal hospital to be erected at Washington, D. C.

PREVENTION *of* TUBERCULOSIS

Conducted under the auspices of The National Association for the Study and Prevention of Tuberculosis.

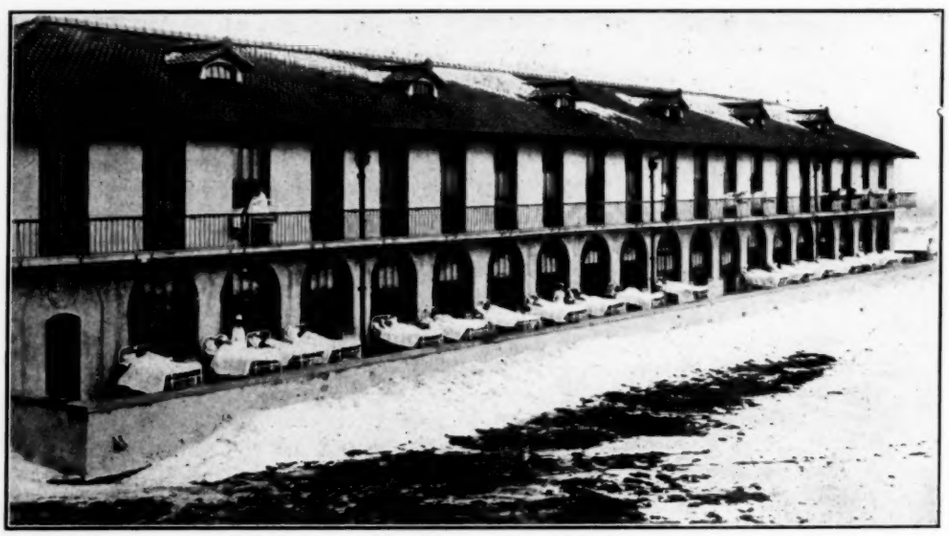
Cleveland's Work in Tuberculosis Registration

Cleveland has made a number of signal contributions to the anti-tuberculosis campaign in the last five or six years. Some of these are outlined in an article by Dr. R. H. Bishop, Jr., Chief of the Bureau of Tuberculosis of the Department of Health, in the February number of the *Journal of the Outdoor Life.*

Probably the most significant contribution, however, of the Anti-Tuberculosis League has been the gradual shifting of responsibility from the shoulders of the privately supported anti-tuberculosis league to the shoulders of the publicly supported Department of Health, so that now most of the work which was in 1910 supported by the League is carried on directly under municipal auspices.

This has meant the transfer, for example, of such work as the dispensaries, day camps, open-air schools, a large share of the educational work, visiting nurses and other facilities. It has also meant a marked increase in the activity of the city along the lines of control and prevention of tuberculosis. For example, where there was one dispensary in 1910, the city now supports six with paid physicians and with twenty-six visiting nurses and an adequate staff. Where there was one experimental open-air school in 1910, the city now has eight and is rapidly providing for more. Where the sanatorium provision in 1910 consisted of only 89 beds, today the new municipal sanatorium has a capacity for 225 patients, and there is in addition, advanced case provision in another institution for 100 more cases. Much of the credit for this remarkable development work in Cleveland is due to the activity of the Anti-Tuberculosis League.

One of Cleveland's most significant contributions, however, to the anti-tuberculosis campaign has been its endeavor to secure as nearly as possible accurate registration of living cases of tuberculosis. While there are numerous local ordinances and a considerable number of state laws requiring reporting and registration of living cases of this disease, it is a sad commentary upon the efficiency of public health work in American cities that in most instances the registration is largely neglected and in some cities it is practically a farce. There are a few American cities with a population of 50,000 or over where the number of living cases reported annually equals or exceeds even the number of deaths from tuberculosis in a given year. That the Bureau of Tuberculosis of the Cleveland Health Department has been able to secure a registration of practically five living cases to every annual death, is significant of its activity and is in itself a contribution to the anti-tuberculosis movement of unusual value. Dr. Bishop does not pretend that even this remarkable record shows a complete registration. He estimates from his records that they have approximately 85 to 90 percent of all tuberculosis cases registered before death. The accomplishment of Cleveland in this respect is spurring many other cities to renewed activity in this most important and fundamental phase of any well-directed anti-tuberculosis campaign.



Cleveland Municipal Tuberculosis Sanatarium, Warrensville, Ohio.

The Chicago Municipal Tuberculosis Sanitarium

Unique in its original conception and daring in its final execution, the Chicago Municipal Tuberculosis Sanitarium, which is to be opened within the next month, stands today as a model for institutions for the treatment of tuberculosis, particularly those which will be established under the control of large municipalities.

The Chicago Municipal Tuberculosis Sanitarium is the outgrowth of the activity of the Chicago Tuberculosis Institute, which secured the passage of a referendum law in 1908, and the following year by an overwhelming majority received favorable action at a popular election upon the erection and establishment of this institution. The accumulation of the tax provided for by the popular vote has given the various institutions a fund of more than $2,000,000.

To Dr. Theodore B. Sachs, one of the pioneers in the anti-tuberculosis movement in Chicago and the leading spirit upon the board of the new sanitarium, much of the credit for the final completion of the institution must be given. With unselfish and unremitting labor he has worked for years studying plans of institutions in every part of the United States and in Europe in order that the Chicago institution might incorporate the best features for their own tuberculosis sanitarium and might avoid the numerous errors of such hospitals already in existence. That this study has borne fruit is evidenced even to the casual observer who visits the institution or inspects the plans of it.

The general plan of the institution, which is erected upon a hundred and sixty acre tract in the northwest section of Chicago, provides for two main divisions, one for the care of advanced cases and one for the care of incipient cases. The infirmary group for advanced cases is erected somewhat on the quadrangle plan, with two long wings and an arm between them, the whole being in the form of a letter "H." This division of the sanatorium will provide for three hundred advanced cases and gives ample opportunity for classification in almost every conceivable way, including single rooms, double rooms, small wards, maternity wards, isolated wards for infectious diseases, and numerous other features. As is the case with the incipient division, the infirmary group has a complete administration building in which are found the quarters of the chief executive and his staff, together with the bacteriological laboratory and research facilities. Sufficient provision is also made for other employees, including nurses and helpers.

Commenting upon the opening of the institution, in the last number of the *Journal of Outdoor Life*, Dr. Sachs says: "In 1905 the entire provision for tuberculous patients in the City of Chicago consisted of about two hundred beds for advanced cases, of which number one hundred and fifty beds were in the Poorhouse. The city was devoid of the least evidence of any organized effort against tuberculosis.

"In 1915 Chicago will have, in all, over two thousand three hundred sanatorium and hospital beds, a comprehensive, well-organized dispensary system and all other auxiliary arrangements essential in the fight against the disease. This places Chicago in the forefront of American cities."

In order to give more privacy to patients who cannot afford private rooms and yet are able to pay a little more than is asked for public ward accommodations, the Hospital for Women of Maryland has provided a group of cosy cubicles, or small curtained apartments, arranged on two parallel sides of a large ward room, with corridor space between the two rows. Each cubicle is 8 x 12 feet in size and receives light through a large window. The plan is designed for the wives of men whose incomes are under $2,000 a year, and the charges are elastic. It is said that in confinement cases it is possible to keep the expense, including the physician's fee, down to $50. Part of the secret of the reduced cost of the cubicle, as compared to the room, lies in the fact that the substitution of a curtain for a wall at that portion opening on the corridor and the grouping of patients closer together than in rooms makes it possible for a nurse to care for more patients.

The International and Great Northern Railway Employees' Hospital Association is the name of a new organization formed at Houston, Tex. The purpose is to provide medical and surgical treatment and hospital care for the employees of the International and Great Northern Railway Company. Eight trustees will manage the association. Four of the trustees are to be officials of the railroad and the other four are to be employees.

PHILANTHROPY *and the* PUBLIC HEALTH

The New York Association for Improving the Condition of the Poor.
Bailey B. Burritt, General Director.

Department of Family Welfare, William H. Matthews, Director.
Department of Social Welfare, Donald B. Armstrong, M. D., Director.

The Bereft Family and Widows' Pensions

BY HOLLAND HUDSON

To those families whose training and income permit them to prepare for no further period than the current week, the death of the bread-winner frequently means economic annihilation. The days, weeks, and sometimes months of illness preceding the husband's death often drain the family, not only of their economic reserve, but of their normal physical capital. Destitution and disease are fellow mutes at the poor man's funeral. The exhausted widow, with no training for her responsibility as a bread-winner, is unable to provide proper food, clothing and hygienic living conditions for herself, much less for her children, and another group of public hospital patients is too frequently the sequel to her brave but hopeless attempts.

As deplorable as the physical disaster just described is the ensuing disintegration of the family, that ancient and natural unit of society. It is no reflection on the administration of institutions for dependent children to observe that just as breast-fed babies with healthy mothers have a better opportunity for good physical condition, so the child who is taken care of by an intelligent mother has a better mental and moral opportunity than the inmates of the best institutions.

Any movement aiming to make possible the proper care of dependent children by their own mothers is thus a movement for the health of those children and their posterity, a movement for normally-minded, strong-bodied children instead of the all-too-common mal-nourished and neurotic half-orphans of today.

The earliest experiences of the New York Association for Improving the Condition of the Poor showed the care of the intelligent mother to be essential to the child's best welfare, and this has been the constant policy of the Association from its beginning. Experience with all kinds of relief work has also shown that the mere giving of money in an emergency seldom restores a destitute family to lasting prosperity and self-respect. The same mistakes and weaknesses that caused destitution once cause it again, and with each economic collapse the insidious habit of asking alms further undermines character.

In order to prevent this vicious pauperism it has been found necessary to give, with every dollar spent for relief and rehabilitation, the education necessary to keep every family permanently on its feet, physically, mentally and economically. The modern training toward scientific education has both justified this policy and facilitated its systematic execution. More than an approximate adjustment of income to disbursements is now possible. The

widowed mother now receives expert instruction in buying and cooking. The trained nurse instructs her in the care of the little ones and the treatment of their ailments. The visitor, while in no wise infringing on the province of the clergy, seeks to assist in bringing about a healthy appreciation of the situation which will give the fatherless children neither an atmosphere of stupid and thoughtless waste nor one of cringing pauperism, but sturdy, intelligent self-respect.

The work of these trained helpers is carefully correlated. The following story of a typical case shows how the death of a bread-winner might have increased the community's burden of invalids and dependents by six more, but how, instead, the widow's problems were studied by trained and sympathetic workers, with the results indicated:

Mrs. O. was the widow of a collector who had been earning a very small salary, which came so far short of their standard of living that she was obliged to help out by doing millinery work. She was a woman of fair education and upbringing, not at all a chronic pauper or "down-and-out." At the time of her husband's death she had three little boys and two girls, the oldest boy thirteen years old. For two years she struggled to support herself and her five children by millinery work, but the long watches during her husband's fatal illness had undermined her health to such an extent that she was in no condition to earn any considerable part of what she needed. Her pastor induced her to place her problems in the hands of the New York Association for Improving the Condition of the Poor.

The visitor assigned to this relief problem found Mrs. O. and her five children living in two rooms with a relative. Larger and more healthful quarters were soon found for them. The trained nurse found that the mother had developed badly diseased gums, that the oldest boy was in danger of losing the use of one arm because of an imperfectly knitted fracture, that the twelve-year-old girl had been under treatment at a Department of Health clinic for eighteen months for mal-nutrition without gaining an ounce, and that four of the five children had dangerously obstructed nasal passages. The mother's mouth was treated at the Post-Graduate Hospital. The case record of the mal-nourished child was consulted at the Department of Health clinic and it was found that the doctor had prescribed milk and eggs, which had been, of course, unobtainable. The little girl now has her milk and eggs and is still gaining weight and strength. Three of the children were operated on for nasal growths and have since shown increased aptness in their studies and increased quickness of mind and body. When Mrs. O. and her family were referred to the Association her children were timid, nervous and old beyond their years. After several months of good food and the companionship of a mother no longer driven frantic by the thought of imminent starvation, they have regained the lusty vigor and the merry spirit of normal childhood.

Whether the means of making possible the proper care of dependent children by their mothers be called "widows' pensions" or by another term is unimportant. The New York Association for Improving the Condition of the Poor now seeks to provide a "pension" for all the bereft families in its care whom observations have shown to be eligible. A recent analytical review of the rehabilitation of widows' families by the Association shows that the best results have been accomplished in those cases in which the widow has been allowed sufficient means to devote a normal and constant part of her time to the care of her children. So conclusive is the evidence embodied in this review that the Association has undertaken to pension the other 430 widows with dependent children now in its care. Twenty thousand dollars of the necessary $72,000 addition to the Association's annual relief budget has already been pledged by the Rockefeller Foundation, in the following terms:

"The representatives of the Rockefeller Foundation have been investigating your work of providing pensions for dependent widows with families. As a result of this study the Foundation is prepared to cooperate with you in this work, and hereby pledges a sum not to exceed twenty thousand dollars ($20,000) a year for a period of ten years. . . . We are impressed with the importance of the work of your visitors in ministering to these families, believing that this patient, careful, personal service is even more important than the material relief."

One hundred and six pensions have been granted since December 19, 1912. Of these, 8 have been discontinued, 4 by reason of the mother's remarriage, 3 because increase in age and earning ability of the children made the family self-supporting, and 1 because of conclusive evidence of immorality. The results in every other case have been so gratifying as to raise no question about the continuation of the advances made.

MONTHLY BUDGET OF THE O. FAMILY

Actual Income		Adequate Income	
Woman earns	$15.00	Rent	$16.00
Lodger		Food	30.30
Church		Fuel and light	3.25
Relatives	2.00	Clothing	12.00
Other societies	15.00	Insurance	2.00
		Sundries	2.00
Total	$32.00		
A. I. C. P.	33.55		$65.55
	$65.55		

Mr. Polhemus Lyon, chairman of the Cape Town (South Africa) hospital board, writes an interesting letter to THE MODERN HOSPITAL. Under the control of the Cape board there are five hospitals, a free dispensary and a convalescent home. Thirty thousand out-patients and 3,500 in-patients are cared for annually, and much the larger proportion entirely free. Twenty-five percent of the income is donated by private citizens. Mr. Lyon regards with much favor a hospital ordinance which went into effect at the Cape two years ago and which is similar to a law in force in New Zealand. Under this ordinance the provincial government appoints six members of the thirty-six composing the hospital board, but the hospitals receive from the government $7.20 for every $4.80 subscribed by citizens, an equal sum for every $4.80 appropriated by municipalities, $4.80 for every $4.80 collected from patients, and $4.80 for every $4.80 received from bequests up to a maximum of $2,500. This plan enables the board to get through practically without any deficit. Every year the government grants not less than $50,000 for extension work, more particularly buildings and equipment, and on this sum the board pays interest at the rate of 2½ percent per annum for 40 years, which settles their obligation. Mr. Lyon is a member of the American Hospital Association and subscribes to THE MODERN HOSPITAL.

An organization of women to be known as the Twilight Sleep Association has been formed in New York City for the purpose of supplying information to prospective mothers regarding the Freiburg method. Plans are under way for an extended lecture tour of the country. Ultimately the association hopes to build a large maternity hospital, where the best method, either twilight sleep or its successor, will be employed. Miss Mary Ware Dennett, Mrs. Temple Emmett, Mrs. Cecil Stewart and Miss Mary Shaw were among those whose names were associated with the undertaking.

PREVENTION *of* BLINDNESS

MATERNITY

Conducted by Carolyn Conant Van Blarcom, R. N., Secretary National Committee for the Prevention of Blindness; Chairman Committee on Infant Welfare, National Organization for Public Health Nursing.

Babies' Sore Eyes

Someone has aptly said that the watchword of a scientific age is "Prevention." Accordingly, we hear on every hand of efforts being made to prevent crime, immorality, various kinds of waste, pain, premature death, etc., these efforts being crowned with no inconsiderable measure of success. The wonder is then that blindness, which is, perhaps, of all infirmities, the one most dreaded and deplored —certainly one of which the spectacle invariably inspires sympathy and compassion—should have been allowed to have the number of its victims swelled year by year, with no hand raised to save them until a comparatively recent date.

It is asserted that forty percent, or nearly one-half, of the blindness of the world is preventable.

And this in an age the watchword of which is Prevention!

The causes of preventable blindness are numerous and varied, among them being: Industrial accidents; accidents at play; Fourth of July celebrations; sequelæ of some of the infectious diseases; wood alcohol; sympathetic inflammations; syphilis, hereditary and acquired; trachoma and other infections; progressive nearsightedness; eyestrain of various kinds, particularly among school children; and ophthalmia neonatorum.

Of all these, ophthalmia neonatorum is the most prolific cause of unnecessary blindness, about twenty-five percent of the pupils enrolled in schools for the blind throughout the country being victims of this disease.

There seems to be fairly definite agreement that we would practically have no blindness from ophthalmia neonatorum if all babies' eyes were first bathed, and then treated with some derivative of the silver salts, and if, in addition to this, all babies' eyes were watched and were given skillful medical treatment immediately upon the appearance of symptoms of ophthalmia.

We know that ophthalmia neonatorum is not really very common—there is about one case in every two hundred births—and that the cases of blindness from this cause are still less frequent; but each case is so pathetic and is so nearly always the result of sheer carelessness and neglect that even the small number occurring annually throughout the country is a reproach to society.

It is increasingly apparent that as in the effort to stamp out tuberculosis, if babies are to be saved from unnecessary blindness, certain legal provisions are necessary. But the foundation upon which the movement must inevitably rest is widespread publicity. And "widespread" we mean, for every member of the public must realize that it is dangerous to neglect the eyes of babies at birth, that it is even more dangerous to neglect redness and swelling and discharge of the eyes during the first three or four weeks of life. And the public must also know that the beliefs that "babies' sore eyes are caused by cold," etc., or that "it is natural for babies to have sore eyes," are fallacious. The medical facts must be popularized and so simplified that there can be no misunderstanding.

NEEDLESSLY BLIND FOR LIFE
neglected during infancy
The State Spends
100,000 Annually
for the Needlessly Blind
There are 10,000 Victims of Babies' Sore Eyes in This Country
BABIES' SORE EYES A DANGEROUS DISEASE
EYES
BLIND
Caused by Germs
Not by Light or Cold.
It often ends in Blindness if neglected
This Disease is Preventable and
If taken in time Curable
BABIES' SORE EYES
IT CAN BE PREVENTED
It takes only a moment of time, 2 drops of medicine
Which Shall It Be?
More Blind Children to suffer and be helped all through life
— OR —
Children filled with the joy of living
EVERY BABY'S EYES SHOULD BE TREATED AT BIRTH
DON'T USE HOME REMEDIES
Get a Doctor at Once
OR
Take the Baby to an Eye Clinic
Long Years in an Institution for the Blind
Proper Care in Time may Prevent Lifelong Blindness
Support Legislation
Providing for
1. Free Silver Nitrate Outfits
2. Reporting all Babies' Sore Eyes to Health Officer
3. Home or Hospital Care for Reported Cases
4. Early Reporting of Births
5. Training and Control of Midwives.
Who Can Help.
YOU
We Cannot Give Sight to the Sightless but
We Can PREVENT Needless Blindness

The accompanying exhibit, consisting of a five-panel screen, which presents the problem of infant blindness and its prevention, has been found valuable in the educational campaign which is being carried on. It is attempted by means of this exhibit to outline a legislative campaign and to drive home the facts that babies may go blind if they are neglected; that babies' "sore eyes" is a dangerous disease, and one which may occur in any family; that it can be prevented; that it is dangerous to temporize by using home remedies; and to impress upon every individual his or her responsibility in helping to save infant citizens from unnecessary and lifelong blindness.

The hospital at Junction City, Kan., is to be remodeled and enlarged.

Need of Organized Effort for Better Supervision of Pregnancy and the Puerperium

The real necessity and importance of instructing the lay public in the field of preventive medicine has been thoroughly demonstrated during the past few years. In the efforts of the medical profession, health boards, hospitals, and philanthropic organizations to reduce infant mortality, proper attention is now given to the education of mothers in general and an antenatal hygiene. Why not go a step farther and instruct them in the real necessity of expert care before, during and after confinement?

The public, and, unfortunately, a great number of the medical profession, have too long looked upon childbearing as simply a physiological process needing no special care in what is termed normal cases. After centuries of vaunted civilization, the normal case, in the strict sense of the word, has become the exception and there is no case that should not have expert supervision during pregnancy, labor and the puerperium. The apathy and neglect of the medical profession in treating this function, "the most important in woman's life," and on which hangs the fate of nations, is culpable, in spite of the poor fees and the drudgery entailed in this class of practice.

According to the last United States mortality census eighty percent of the deaths of babies under one month was due to premature birth, congenital debility, injuries at birth, malformations and convulsions. Someone has grievously failed in necessary precautions, protection and care. American obstetricians are conceded to be the most skilled and progressive in the world. Our medical schools give not only thorough courses in the physiology of reproduction, but some practical experience to students in delivery and after care. It would be absurd to put all the blame on the profession.

In the year from October 1, 1912, to September 30, 1913, the number of births in the Borough of Manhattan was 65,085, of which 40,701 were reported to the health department by physicians and 24,384 by midwives. It is estimated that midwives attend fifty percent of the births in the United States. This class are undoubtedly the worst offenders and constitute a grave problem that has long demanded solution. Because of inadequate statistics, no one knows how many midwives are practicing in America. The old world provides comparatively adequate instruction, regulation and supervision; we have either no laws or such as have proven ineffective and inadequate to control the midwife. She defies the physician and all in authority as she defied Pharaoh more than three thousand years ago. It is futile to hope for a speedy abolition of this deep-rooted system. The public must be brought to realize that healthy mothers are the greatest asset a nation can possess and that they must not continue to subject them to unnecessary risks in "their most essential function of childbearing." Let it become generally known that bad obstetrics not only is one of the main factors in increasing infant mortality, but has filled our institutions for the blind and causes seventy-five percent of the gynecological troubles that are making nervous wrecks of our women.

New York City was the first in the United States to establish a school for midwives. This was organized in 1911, at Bellevue, and although conducted on a small scale, with its immense out-patient material, it has already demonstrated to the community that this step goes far to ameliorate our present disgraceful midwife system. The course of instruction covers six months and is eminently practical in its nature. The pupils are taught, largely by demonstrations, elementary anatomy of the female generative organs and pelvis, including pelvimetry, and the theory of obstetrics. The extreme danger of infection from vaginal examination is impressed upon the pupils and they are given at least an inkling of the possibilities of auscultation and palpation in determining presentation, etc. Prenatal care of the mother and her surroundings, care of the eyes and cord of the baby, nursing care of mother and infant, and the importance of breast feeding are emphasized. The entire care of the house and equipment is required of the future midwives and they thus acquire training in cleanliness, cookery, sanitation and hygiene. Statistics at the school prove conclusively that the graduates summon the aid of obstetricians in a far greater percentage of cases than does the old type of midwife. This should be gratifying to the physician who fears that trained midwives will encroach on his obstetrical field. The men responsible for the establishment of the Bellevue School of Midwives are not deluded into thinking that such schools will result in an ultimate solution of this problem, however, and they deserve the cooperation and support of the community for their laudable efforts toward the amelioration of conditions.

The Society of the Lying-in Hospital of the City of New York is doing excellent work not only in giving to thousands of poor women the advantages of modern obstetrical care, but in the training of medical men by skilled obstetricians. Last year the society reported 2,725 confinements in tenements and 2,745 in the hospital, conducted by physicians under the supervision of the attending obstetrical surgeons. The time must come when the public will insist on a specialist in obstetrics as they now do in other branches of medicine. Lying-in hospitals, in many respects ideal for confinements, can never, because of their enormous expense to the community, become sufficiently numerous to solve this problem. The problem of economy and lack of space necessarily shortens the duration of the lying-in period and many patients are discharged before the upright posture should be permitted. The resumption of household duties before the uterus has receded from the anterior wall of the abdomen and returned to the pelvic cavity often results in misplacements, etc., that bring on nervous conditions frequently bordering on insanity. It is impossible to fix any period for the duration of this process of involution, and while one patient might tentatively sit up on the ninth day another should carefully avoid it for weeks.

Some of our health departments have already a "Division of Child Hygiene." The director of this division may be an obstetrician capable of coordinating prenatal work already done by hospitals, dispensaries and social service nurses, and of establishing supervision before, during and after confinement.

The work done in several of our cities during the past five years, for expectant mothers, continues and will inevitably turn public attention to this problem, too long either inadequately dealt with or neglected. Enlightenment of the laity on the dangers of bad obstetrics will be the entering wedge for the ultimate solution of the midwife problem. In the meantime our medical schools should be more insistent with students on non-interference and the necessity of post-graduate work if they wish to do good obstetrics; we should have more schools for midwives and better laws for their regulation and control.

Bequests in the sum of $200,000 were recently paid to New York City hospitals by the executors of the B. Altman estate, as follows: $100,000 to Mount Sinai Hospital, $25,000 to St. Luke's Hospital, $25,000 to the German Hospital and Dispensary, $25,000 to the New York Eye and Ear Infirmary, and $25,000 to the Lincoln Hospital and Home.

DEPARTMENT *of* LIFE EXTENSION

Some Problems in Life Lengthening

BY EUGENE LYMAN FISK, M. D.

Director of Hygiene, Life Extension Institute, Incorporated, 25 West 45th street, New York, N. Y.

Many people take it for granted that our advancing civilization is accompanied by a progressive improvement in national vitality. To those unversed in the study of mortality statistics, the movement of the general mortality is accepted as a barometer of such conditions. As everyone knows, the general death rate has been steadily falling for a number of decades. In the United States registration area the death rate has fallen from 19.8 per one thousand living in 1880 to 14.1 in 1913. The situation, to the casual observer, seems entirely satisfactory, and does not apparently call for any heroic measures so long as we fight tuberculosis and other communicable diseases.

This fall in the general death rate is a world phenomenon. It has been going on for a century or more throughout all civilized lands. In certain countries the registration of births and deaths was fairly accurate even in the 18th century, and we are able to ascertain from their records that in such communities the growth of knowledge and improvement in social conditions have been accompanied by a gain in vitality, which is chiefly manifested in the earlier ages of life.

For example, the following table will show what has taken place in the City of Geneva since the year 1551, where the death rate has been more than cut in half during that period:

1551-1600.....39.7	1751-1800.....29.5
1601-1650.....37.0	1806-1812.....27.0
1651-1700.....35.9	1851-1890.....24.8
1701-1750.....33.5	1891-1900.....17.6

In the City of Berlin since 1721-30, the death rate has been reduced from 40.6 to 15.5, a reduction of more than 50 percent.

In London the death rate has been reduced since 1880 from 29 per thousand to 14.

In Paris the death rate during the same period was reduced from 30.5 to 17.5.

In Sweden the death rate in 1751-60 was 27.4, and in 1912 it was 14.2. The Swedish records show that this fall in the death rate has been due to a gain in vitality during the early years of life, yet there is a substantial reduction at every age period. For example, during the period 1751-60 the death rate under five years of age was 83.9 per thousand. In 1891-1900 it was 36.9, a reduction of 57 percent. This saving in mortality continues during every age period of life, but to a lesser degree after 45 years of age. This same trend is noted in other European countries.

In the United States we note important differences. An analysis of the available statistics shows that the fall in our general death rate is *wholly due* to a reduction in the death rate among the age groups below 45 to 55. In the late periods of life we have lost ground, and our records show an increasing mortality, notwithstanding the fact that the proportion of those living over age 45 is less in the United States than in European countries.

How misleading the general death rate may be as a guide in such matters is shown by the records of New York City. In 1885 to 1910 the general death rate of New York City fell from 27.5 to 17. But the following comparative table shows that the gain has been wholly due to the saving of lives under forty, a decreased expectation of life being shown at this age and beyond, as compared to thirty years ago. The exact age where the loss begins for this country at large cannot be determined, but statistics of the registration area, separate cities and separate states and cities, indicate that it lies in the age period between forty-five and fifty-five and continues beyond.

APPROXIMATE LIFE TABLES FOR THE CITY OF NEW YORK BASED ON MORTALITY RETURNS FOR THE TRIENNIA 1879 TO 1881 AND 1909 TO 1911

	1879–1881			1909–1911		
Age	Males	Females	Persons	Males	Females	Persons
–5	39.7	42.8	41.3	50.1	53.8	51.9
5	44.9	47.7	46.3	49.4	52.9	51.1
10	42.4	45.3	43.8	45.2	48.7	46.9
15	38.2	41.2	39.7	40.8	44.2	42.5
20	34.4	37.3	35.8	36.6	40.0	38.3
25	31.2	34.0	32.6	32.7	36.0	34.3
30	28.2	31.0	29.6	28.9	32.1	30.5
35	25.3	28.1	26.7	25.4	28.4	26.9
40	22.5	25.2	23.9	22.1	24.7	23.4
45	19.8	22.4	21.1	18.9	21.1	20.0
50	17.2	19.4	18.3	15.9	17.7	16.8
55	14.5	16.4	15.4	13.2	14.6	13.9
60	12.2	13.8	13.0	10.8	11.8	11.3
65	9.9	11.2	10.5	8.8	9.4	9.1
70	8.5	9.3	8.9	6.9	7.5	7.2
75	7.1	7.5	7.3	5.3	5.7	5.5
80	6.2	6.5	6.4	4.1	4.5	4.3
85	5.4	5.5	5.5	2.0	2.4	2.2

The possible causes of this unfavorable trend in mortality in the United States require further study. The admixture of foreign blood has been advanced as a possible explanation, but there is as yet no sufficient proof to support this hypothesis.

It is reasonable to assume that the extraordinary industrial development in this country, and the rapid increase in the population, have resulted in a lack of adjustment. In the older civilizations, life moves more in grooves, and it is probable that, in Germany at least, more thought is given to vocational training and adaptation of the individual to his environment.

In Norway, where a very low death rate prevails, life is singularly free from nervous tension, noise and unrest.

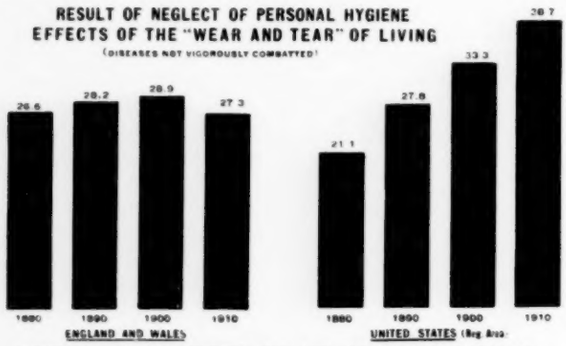
Overeating and a reduced amount of exercise incident to changed working habits, and increased luxury of living have been advanced as reasons for our increasing mortality in the later ages.

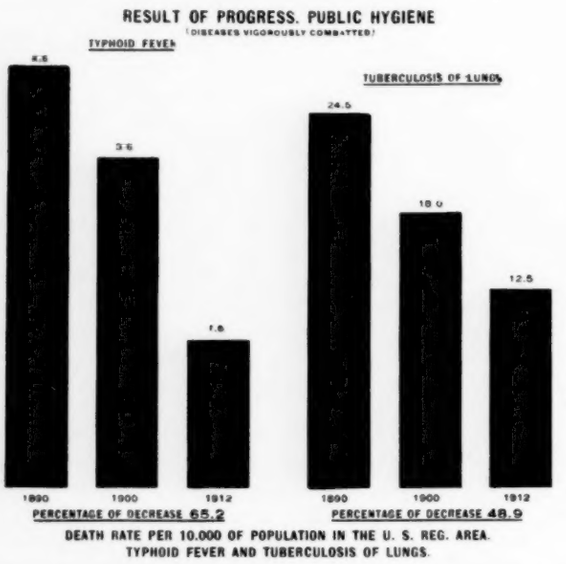
In the past thirty years the per capita consumption of alcohol, especially of malt beverages, has increased in this country very markedly, but it is still below that of England and Germany. This increase, however, as well as an increase in the use of tobacco, reflects a more luxurious habit of living, and is no doubt accompanied by overeating and other excesses. In England and Germany the per capita consumption of alcohol has distinctly fallen during the past thirty years.

In studying British statistics, we note that the mortality from diseases of the heart, blood vessels and kidneys has shown a downward trend in that country during the

past several decades, while in the United States registration area the death rate per 10,000 living from these affections of middle life and old age has increased 39 percent since 1890, confirming the available statistics showing an increase in the mortality during the later age periods.

No one can question that this is a problem exceeding in importance the tuberculosis problem. The needless loss of so many lives during the useful age periods would in itself be a serious matter, but the unfavorable trend of mortality in these age groups, if it continues, bodes ill for our civilization.





In advance of ascertaining any single cause for this trend, if there be one, we may at least wage a vigorous campaign for the study and practice of personal hygiene. Apart from some possible unfavorable racial strain or biologic cause, these degenerative maladies of the heart, blood vessels and kidneys must necessarily be caused by errors in living habits—eating, drinking, smoking, sleeping, working, playing, etc.

As a general formula, temperate living all along the line is the indication for self-protection.

Such modification of diet, work, play, exercise, sleep, etc., as may be needed in each particular case, can only be satisfactorily determined by periodic physical examinations, which should commence in infancy and should be given at least once a year throughout life.

It not infrequently happens that well-meaning people sustain injury by trying to follow the good example of their neighbors, without knowing whether or not what is good for their neighbor is good for them. Hence the need for this periodic physical stock-taking, in order properly to adjust the business of living. There are certain broad general principles that underlie healthful living, but even these principles often have to be modified to suit individual cases.

In every hospital and in every physician's practice the study of the causation of these degenerative maladies should be earnestly carried on.

The examinations thus far made by the Life Extension Institute show the encroachment of these maladies into the early years of life. Every effort should be made, by periodic tests of the circulation and kidneys, to detect the early signs of such troubles, when corrective measures can be successfully applied.

Nursing is one of the noblest professions, and is rapidly becoming recognized as one of the most important. . . . The nurse should be a student of human nature as well as of human ailments. . . . Keep reading, reading, reading. . . . Please don't let agriculturists and others who are traveling about the country discourage you in the study of the classics. When I was a farm boy I purchased a Latin grammar jointly with a neighbor boy, and I studied Latin and Greek when I was in college. I want to stand here and pay tribute to the value I gain from the classics in English and the sciences. You must know Latin if you are ever to read the original of materia medica, and to gain much of the most important information concerning your work. Don't disregard progress. It is not too late for you to begin to study Latin. . . . If you will only go out into the world and make it a little happier and make yourself a little better man or a little better woman, as the result of something I have said, I have fulfilled my purpose.—Governor Woodbridge, North Ferris, Mich.

The St. John Ambulance, the only Red Cross Society in India, has taken up with greatest promptitude its duties in the present European crisis. During the past five years the society built up the position of a national institution in India and has established in so brief a period no less than three hundred centers in the Indian Empire. In addition to hospitals in the theater of war there will be hospital ships plying between Bombay and Europe as well as ambulance trains in India, which will require comforts on a special scale. The association will also be required probably to provide comforts for rest camps and rest stations on the railways. In addition to the ordinary units the Indian branch of the association has designed what is called the Red Cross bag for invalided British and Indian soldiers upon leaving the hospital.

Dr. Emma Martin, formerly of Otterbein, Ind., but for the last thirteen years in China as a medical missionary of the Methodist church, is just returning to Pekin from an extended furlough in this country, where she has been studying advanced practices in surgery at the Rush Medical College, Chicago, and the Mayo Hospital at Rochester, Minn. According to Dr. Martin, one of the peculiar operations that falls to the lot of the missionary surgeon in China is that of amputating the feet of Chinese children to save their lives from blood poisoning, caused by bandaging the feet to keep them small. Chinese patients, Dr. Martin says, do not require spring mattresses or soft cushions, as they prefer to lie on a hard pallet with a brick or block of wood for a pillow. On her arrival in Pekin Dr. Martin will take charge of a newly erected hospital of the Methodist Missionary Society.

Physicians at Gary, Ind., and other points in Lake County are working for the establishment of a county tuberculosis sanatorium. The buildings proposed would cost about $125,000.

DISPENSARY *and* OUT-PATIENT WORK

Introductory Note

The Department of Dispensary and Out-patient Work aims to make itself useful to the readers of THE MODERN HOSPITAL who are interested in dispensaries. This means physicians, superintendents, nurses, workers in social service, and trustees of dispensaries or of hospitals having out-patient departments, and of the many hospitals that are now considering the establishment of out-patient departments as supplements to the work of their wards.

It will be the aim of the department to present notes on current developments in dispensary work, and new features of the work of any dispensary or out-patient department that are of general interest; and to include from time to time such special articles as may be timely and important. A "Question Box" will be maintained, and readers of THE MODERN HOSPITAL are invited to send questions concerning any phase of dispensary work or administration. The best available experts will be secured to answer the questions, and if questions and answers are of general interest, they will be printed in these columns.

Readers are invited to send any news matter relating to any dispensary or out-patient department with which they are concerned, and which they think would interest the readers of THE MODERN HOSPITAL. All communications, including questions for the "Question Box," should be addressed to the Editor of the Dispensary Department, office of THE MODERN HOSPITAL, Tower Building, Chicago.

It Feeds the Wards

It Follows-up discharged Patients

(Preventing recurrence of disease and promoting Hospital Efficiency)

It Forestalls Serious Disease by treating it in early stages

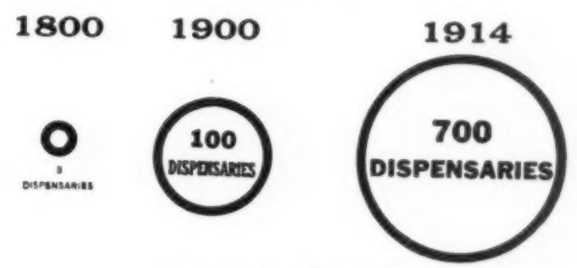
(Promoting Economy of Hospital Service)

Self-Supporting Dispensary Clinics

At the Forty-second Annual Session of the National Conference of Charities and Corrections, to be held at Baltimore May 12-19, 1915, a section will be reserved for the discussion of "Pay Clinics for Persons of Moderate Means." This is a new field in dispensary work which, as yet, few institutions have entered.

The need of better provision for medical care of self-supporting families of small means has been felt by many laymen and, more and more, doctors are expressing their belief in such a plan. In an address by Dr. E. P. Lyon, Dean of the Medical School of the University of Minnesota, before the graduating class of the St. Louis University School of Medicine, June 21, 1914, the speaker said: "Cooperation among doctors themselves is necessary if we are to secure the best results in the care of the individual patient. Of course the consultation is a long-established attempt at such cooperation; but that its usefulness is very limited, as ordinarily carried on, there can be no doubt. Whatever good there may be in consultation (except in hospitals), has accrued almost exclusively to the wealthy patient. Surely medicine will never be rightly adjusted in the social order until every man, woman and child is entitled to receive and actually does receive the best oversight and treatment that science is able to afford.

"There are various reasons for this condition. One of the most potent is the ever-widening specialism in medicine. Of the inevitable necessity of this movement there can be no doubt. No one can hope to compass the tremendous volume of medical fact or become proficient in all the valuable diagnostic, therapeutic and operative procedures. Specialism in any line of endeavor, whether medical or otherwise, tends to narrow the field of activity and of vision. Concentration increases intensity at the expense of distribution. It acts in human activity exactly as in the electrical transformer; if you increase the voltage, you decrease the amperage. The practical point is that for certain patients the work of several experts is necessary if the best results are to be obtained. How well has medical practice succeeded in adjusting itself to secure these benefits for the individual case? In my judgment it has not succeeded. It is true that in the best charity hospitals the very poor individual receives the services of all the necessary specialists and all the modern appliances. For the small group who can pay large fees there is possibility of getting what is needed by reference from specialist to specialist and the paying of separate fees for each element of service. The doctors may think that this procedure works well. In my opinion it does not work well, even for the doctors, taking their interests broadly; and from the patient's point of view it is subject to the criticism that they interpret the multiplicity of fees as repeated payments for a single service. They look on specialism as a new device for padding their pocketbooks. But the fatal fallacy of the present arrangement is its inapplicability to the great class of independent poor, who cannot by any possibility meet the repeated demands for even moderate fees. They simply go without the service; and, of course, the doctors cannot render it."



The Growth of Dispensaries

The establishment of a department of dispensary work in THE MODERN HOSPITAL is a recognition of the remarkable increase in dispensary work in the United States in recent years. The accompanying chart, which pictures this development graphically, understates rather than overstates the truth.

More Money for Dispensary Work

A notable address was made by Dr. S. S. Goldwater, the well-known superintendent of Mt. Sinai Hospital, New York City, and now Commissioner of the Department of Health of New York City, on January 21, 1915, before the annual meeting of the Hospital Saturday and Sunday Association of New York. This Association, by the way, has been established for several years as a cooperative body of many of the leading hospitals of New York City for the joint raising of funds by collections in churches and synagogues and by solicitation from the general public. The funds have been distributed among the hospitals, at first in proportion to the number of days of free-bed care given during the preceding year, but recently certain minimum standards of hospital work have been insisted upon as a condition of the receipt of funds.

The portion of Dr. Goldwater's address which is of interest to all who have faced the difficult problem of securing funds for improving dispensary work is as follows:

"I have said that there was a particular piece of work that I wished to urge upon the Hospital Saturday and Sunday Association to which heretofore no attention has been paid by you; I refer to dispensary work.

"Heretofore money has been given by you to hospitals in proportion to the amount of free work done for in-patients. No attention has been given to out-patients. If you compare the in-patient work of the hospitals with their out-patient work, you will find that the in-patient work is done today in a much more satisfactory manner than is the out-patient work. I think that anybody who compares the two must realize that it is the out-patient work that especially needs support and development, rather than the in-patient work, if one has to choose the one or the other. Some three years ago, realizing the need for the development of out-patient work in this city, there was formed the Associated Out-Patient Clinics. This Association has been making some very interesting studies.

"At the end of this year, approximately, the Associated Out-Patient Clinics will exhaust the fund given to it by the New York Foundation for purposes of investigation and of preliminary organization. There will have been gathered by that time a fund of knowledge in regard to dispensary work which will be tremendously valuable if applied, but which will have no value if not applied. How can it be applied?

"Those who have been working in the Associated Out-Patient Clinics realize that in order to carry home to the various dispensaries the lessons of its studies, it is indispensable that those who are endeavoring to teach these things and to bring about the adoption of higher standards of efficiency in medical work and in business management, shall have the sort of control that goes with the power to give money. You are distributing today something over a hundred thousand dollars among the hospitals of the city. The hospitals welcome your gifts and profit by them. But I doubt whether you succeed in influencing the policies of the various institutions to any great extent by these comparatively small sums—small, when you compare the sum given to any one institution with the total expenditure of that institution.

"On the other hand, if you will take a hundred thousand dollars—or even half of that sum, and will distribute it among the dispensaries of the city, with the proviso that any dispensary receiving aid shall conform to the right standards, you will be doing a work of great value to the city, and will speedily bring about a radical change for the better in the work of many local dispensaries.

"In the course of its investigations the Associated Out-Patient Clinics has learned, let us say, that clinical work of a particular kind can only be done effectually, that treatment can only be given adequately, if there is supplied a certain equipment; a microscope, for example, for diagnostic purposes. Dispensaries are not equipped with the laboratory facilities they should have. Such facilities are not very costly. They could easily be supplied with such sums as this Association might distribute for that purpose, and the gifts would be felt in this field, because the total amount of money available for dispensary support today is very small, compared with the total amount spent for sick relief of all sorts. Three million consultations are held annually in the out-patient departments of this city. The cost is, perhaps, twenty cents for each consultation, or six hundred thousand dollars for the total work. Approximately half of that is derived from the small payments made by the patients themselves, so that probably the net expenditure of all the out-patient departments and dispensaries of the city today for carrying on work, which amounts to more than three million consultations per annum, is only about three hundred thousand dollars. It is a very small sum when you consider the tremendous extent of this work, which in some ways is more important than the in-patient work of the hospitals themselves.

"Now, with fifty or one hundred thousand dollars in hand, and with a clear conception of what dispensary work should be, you should have no difficulty in persuading dispensaries to change their methods for the better. Many dispensaries today are doing wretched work, which in the end unquestionably brings upon the hospitals the cost of maintaining in-patients who should never have become in-patients. So that if you feel that your interest is in in-patients and not in out-patients, then for the sake of the in-patient service—in order that it may be reduced to the smallest possible proportions—you should make an effort to help the dispensaries and thus to keep out of the hospitals people who would not go there if the dispensaries were properly managed.

"I wish to make a strong appeal to this Association to interest itself in this particular phase of hospital work, upon which the welfare of the hospitals themselves depends to so very great an extent.

"In almost all of the hospitals of the city social welfare work has been begun and has been developed in connection with the in-patient service. But comparatively few of the dispensaries are doing social work adequate to their needs and opportunities. They do not know the conditions that lie behind the diseases they are attempting to treat; they have no facilities for adequate examination; they have no salaries to pay to their staffs; their work is done in a hurried and slipshod manner; diagnoses are often wrong.

"It is because this work is so enormous in bulk and of such overwhelming importance that I appeal to you to interest yourselves in it and to do what you can through the wise use of your funds, to raise dispensary standards, to endeavor to bring about dispensary coordination, to urge upon dispensaries and out-patient departments the adoption of proper minimum standards for work in all of their departments."

The United States Army sanatorium at Fort Bayard, N. M., is to have its capacity greatly increased as a result of the decision of the war and navy departments at Washington to consolidate the several government sanatoriums for tubercular army and navy men into a single institution. Fort Bayard has been decided upon as the logical place from a climatic standpoint for such a sanatorium, and the million-dollar plant there will be enlarged to accommodate the additional patients who will be transferred to that place as soon as accommodations can be provided for them. This decision on the part of the government is understood to mean the abandonment of the naval sanatorium at Fort Lyons, Colo., and the naval and marine hospital at Fort Stanton. Each of these institutions is now caring for about 300 men.

A trust fund for the establishment of a hospital in connection with Washington University, St. Louis, is created by the will of the late Mrs. Eliza McMillan. The hospital is to be known as the McMillan Eye, Ear, Nose and Throat Hospital. The bequest is contingent, however, on the condition that Mrs. McMillan's son, William Northrop McMillan, has no children. The son is 45 years of age and has been married for many years. Mrs. McMillan was the wife of the former president of the American Car and Foundry Company, who died in 1901.

It was recently announced that the building now occupied by Mercy Hospital (for negroes), Seventeenth and Fitzwater streets, Philadelphia, would be sold and a larger and more modern building erected on the east side of Twenty-second street, below Reed. All who wish to help the institution have been asked to pledge ten cents a day for thirty days, with a view to raising $10,000 to apply on the cost of the new building.

SOCIAL HYGIENE

VENEREAL DISEASES

Conducted by William F. Snow, M. D.,
General Secretary, The American Social Hygiene Association, 105 West Fortieth street, New York City.

Placing Venereal Diseases on a Preventive-Medicine Basis

Venereal diseases are generally recognized to be dangerous communicable diseases, and enough is known of their etiology, treatment and prophylaxis to make their suppression and gradual eradication theoretically possible if this knowledge is properly applied. Furthermore, these diseases are ranked with tuberculosis in prevalence and seriousness as a national menace to all races, ages and social groups of people. Yet few boards of health even mention them in their statistical and administrative records, and still fewer departments of health or hospitals make any serious effort to combat them. Probably the reason why no serious national effort has hitherto been made to attack this preventive-medicine problem is to be found in the complex involvement of these diseases with the sex relations of men and women, and in the public's complete lack of general information upon the transmission and dangers of venereal infection.

Almost within the present century has come the realization by the American public that prevention of many diseases through community effort is practical and desirable. The brilliant campaigns against yellow fever and malaria, as insect-born diseases; the inspiring campaign now progressing against hookworm, as a soil-born disease; the steadily growing campaign against typhoid fever, primarily as a water and food-born disease; the slow but tangible advances of the campaign against tuberculosis, as a contact-born disease—all have contributed to the awakening of public opinion in support of efficient health departments, hospitals, and social agencies, directing their efforts toward the suppression or eradication of preventable diseases. This has extended beyond the field of recognized infectious diseases to such problems as the control of cancer and the promotion of mental hygiene.

With the growing realization of the people that venereal diseases are essentially contact-diseases so closely limited to immediate contact, and so largely spread through the contact involved in sex relations that they might reasonably be called "sex-born" diseases, there has come an understanding that this battle must be organized, not against the mosquito, nor the soil, nor foods, nor housing primarily, but against the sex relations and other intimate associations of the venereally sick, with the well. It is just these forms of contact which from biological necessity and from ancestral custom are most vitally interwoven with all that is beautiful and sacred in love, marriage and the birth of children. The public has grasped this idea and in characteristic fashion has begun to make experiments in meeting the situation. Many of these experiments have been superficial, some unwise and a few distinctly harmful, but the preventive-medicine problem is fairly before the people, and those who can help have a duty to perform in wisely guiding them toward a solution. This responsibility falls especially on the medical, nursing, educational and religious professions.

It was to be expected that the social hygiene movement would pass through a stage of "being discovered" and exploited, and there is cause for congratulation that this stage has nearly passed. Within the last two years important advances have been made in placing the movement on a sound basis.

In America the American Social Hygiene Association has been organized as a national clearing-house and its activities outlined on a comprehensive plan. A number of state and city health departments, notably in New York, have instituted important administrative measures in this field. The Boston Dispensary and several other institutions have established social service work with venereal disease cases. In the educational field unwise methods have been largely abandoned and conservative work is being quietly developed in the universities and normal schools. Parents are being impressed with their responsibility in the matter. Legislative and administrative advances have been made in the suppression of prostitution. The American Public Health Association has appointed a committee to study and report upon the problem, and the Association for Improving the Condition of the Poor, in cooperation with other agencies, is making a comprehensive survey of New York clinic and hospital facilities for venereal diseases. In England a Royal Commission on Venereal Diseases has issued its first interim report. Elsewhere in Europe most encouraging work has been in progress.

The appointment in 1913 of a committee of the American Hospital Association in accordance with the following motion promises valuable aid to the social hygiene movement:

"Resolved, that a committee of five be appointed by the president to study the character, cost, and value of direct and indirect work for the prevention of disease, now conducted by hospitals and dispensaries, to arrange in the order of their importance and practicability successive steps for the extension of such work and to prepare methods for its financial support, and for its correlation with similar work of other agencies, public and private."

The following are extracts from the first report of this committee:

"The trend of modern medicine is strongly in the direction of prevention, and the hospital, reflecting as it does the progress of medicine, must follow this trend. A hospital is not fulfilling its duty to its patients unless it combines with the curative work of its wards sufficient preventive work of a clinical nature to minimize the chance of recurrence of disease. * * * Every hospital in this class (large general hospitals) needs a social service department. * * * The work of the social service department should be planned so as not to duplicate the work of charity organizations and municipal departments already covering their special fields. The cooperation and assistance of these organizations and departments should be enlisted, wherever possible, in the preventive work of the hospital. The social service department is the chief agent through which this outside cooperation is practically secured. * * * Finally, we should bear in mind the use of literature as a means of educational and preventive work along health lines. The hospital may well be a center from which will be distributed printed information concerning diseases, such as tuberculosis, typhoid, or instructing in hygiene. A large number of leaflets and pamphlets have been prepared by public and private agencies for such use. It should, however, be borne in mind that merely to hand out literature does not usually amount to much practical service."

It will be evident that hospitals have the opportunity to occupy a strategic position in social hygiene work through these channels pointed out by the committee.

LETTERS *from our* FIELD EDITORS

Miners' Hospitals in the State of West Virginia

Under an act of the state legislature of West Virginia, passed in 1899, the state authorized the construction of three hospitals, to be known as Miners' Hospitals Nos. 1, 2 and 3. This same act also provided for the maintenance of these institutions, which were located, respectively, in Welch, McDowell County; McKenree, Fayette County; and Fairmont, Marion County.

These hospitals have an aggregate of 185 beds, the largest being at Welch with a capacity of 75. The state has invested in these three hospitals a total of $300,000 or more; the appropriation for each of the years 1913 and 1914 was $88,000.00, or about $29,000.00 for the maintenance of each institution.

As we understand it, these hospitals were founded as a political move to influence the vote of the miners of the state, of whom there are about 85,000, but not all of whom are in the district directly benefited by these Miners' Hospitals. As a matter of fact, railroad accident cases are also taken at these institutions.

Nevertheless, legislation of this sort may be said to be class legislation, pure and simple, for the reason that only those who are employees of the coal companies, or, in a few instances, railroad employees, are directly benefited by them. As a matter of practical working not all of the miners are treated in these hospitals, because the mines are scattered all over the state, and often, especially in the case of a serious accident, the patient is placed in the nearest hospital.

Miners' Hospitals, too, tend to pauperize the better grade of employees of coal companies, for it is the man on a large salary or in the office, receiving free treatment, who reaps perhaps an even greater benefit than the miner working in an isolated plant.

A strange condition of affairs now appears: unwittingly, the very legislature which inaugurated these hospitals legislated them out of existence by the passing of the Workman's Compensation Act in 1911, which makes it possible for a worker in any industry, insured under this act, to be cared for in the hospital of his choice; the pay for this care comes from state funds, and, while inadequate, it is a step in the right direction. But in order to excuse the existence of the Miners' Hospitals, the public service commission has ordered all public service cases in the neighborhood of the Miners' Hospitals cared for in these institutions. This eliminates what little support is afforded from the state fund in the care of those coming under the Compensation Act, and leaves all of the charity work for those private hospitals in their vicinity, as no real "charity" work is allowed in these Miners' Hospitals.

There is now on foot a movement inaugurated by the Marion County Medical Society of Fairmont, West Virginia, to ask the legislature to abolish these Miners' Hospitals and appropriate the money used for their support, and the amount obtained from the sale of the buildings and equipment, for the use of those hospitals which are now doing a great amount of charity work throughout the state without state aid.

PLINY O. CLARK.

The California Nursing Law

As is well known, the California legislature passed a law limiting the work of pupil nurses to eight hours in any one place, and permitting graduate nurses to work as long as they please. This law was in connection with the eight-hour law for women and was secured as a result of the representatives of the Nurses' Association in the City of San Francisco securing the aid of the Central Labor Council.

For years pupil nurses had been commercialized by certain institutions on the coast to an extent that was disgraceful. Inexperienced pupil nurses, even nurses in their first year of training, were sent out to private patients at full nursing rates, and bills for their services were rendered and collected by certain institutions.

The evil conditions existing in some institutions in this state, I understand, were given as the reason for the limiting of the time of the pupil nurses for work in any one institution. There exists no law that would prevent them from working very hard in one institution for eight hours a day and going to another institution and working eight hours a day more, and then going to another institution and working for eight hours, thus completing the twenty-four hours for one day.

There are now resting before the United States Supreme Court the arguments for and against the eight-hour law, and a test case is being tried by the State of California vs. the Samuel Merritt Hospital of Oakland, California. The argument for the defense was presented by the attorney for the hospital, Mr. John F. Bowie, attacking the constitutionality of the eight-hour law, and two briefs were presented by the representative of the labor organization defending the law. The hearing was held in Washington in the early part of January, and it is to be hoped that the decision will be handed down very shortly. In the interest of the charitable institutions of this state it is to be hoped that the decision will be in favor of the opponents of the present eight-hour law and that the nurses' and other similar organizations of this state effect such regulations of training schools as will be necessary to control the deplorable conditions which have existed.

It is irrational to believe that the time of employees, nurses and physicians, whose business and profession it is to care for the sick, should be limited. Sickness and disease are not subject to limitation in time and such attempts to regulate humanitarian methods should be combated by the entire medical profession. To supplant undesirable conditions by harmful laws is not constructive legislation, and I predict that if the eight-hour law is continued, as it is now written, that the charitable institutions will not be able to withstand the increased burden of existence, unless that burden is carried by the patients, many of whom are working people.

H. T. SUMMERSGILL.

Miss Maude Landis, R. N., has accepted the superintendency of the Edward W. Sparrow Hospital, at Lansing, Mich., vice Miss Mary Trafford, resigned. Miss Landis goes to the Michigan city from Missouri. She is a graduate of the Scarritt Training School, of Kansas City, and was for several years in charge of the Scarritt Hospital, and served more than seven years as superintendent of Levering Hospital, at Hannibal. She has been a member of the Missouri state board for the examination and registration of nurses for five years.

LETTERS TO THE EDITOR

Recognition of Hospital Architects

To the Editor of THE MODERN HOSPITAL:

I was particularly interested in the article in your February number by Dr. Oliver H. Bartine, of the New York Society for the Relief of the Ruptured and Crippled, on "Building the Hospital—Organization and Methods."

Had an architect, whose practice in the exclusive planning of hospitals for the last twelve years, as mine has been, written this article, he could not have made it more concise, nor have struck the nail more squarely on the head. As a matter of fact, Dr. Bartine's statements were made in a manner in which no one on the "inside" could possibly have made them. The method of cooperation, as laid down by Dr. Bartine, is particularly interesting and timely.

Particularly striking in Dr. Bartine's paper was the clause upon the selection of the architect and consulting engineer solely upon the basis of the fee charged. Such a procedure is absurd, inasmuch as it precludes the possibility of getting service such as is required. When hospital boards and administrators arrive at the conclusion that they have a moral obligation to the public, and that anything that tends toward the cutting down of efficiency, through the fact that a maintenance charge is high because the hospital is not properly planned and equipped, and through this, perforce, neglecting their patients—then we will have reached a condition wherein this moral obligation becomes paramount.

The committee should investigate the previous work of the architect and consider and study its completeness and relative cost. (I commend most highly the reading of this article in the February number by all those who are contemplating the erection of such buildings.) If efficiency is the direct outcome of conscientious application, then the work for the erection of a hospital should be entrusted to those who are particularly qualified, through this efficiency, to design such buildings, just as in the same manner a surgeon or attorney receives reward for such successful service.

A man who has given up the general practice of architecture and who has for years devoted himself to this one class of buildings exclusively, is best qualified to design such buildings. I should say that there are at the present time in this country probably five men who are qualified as experts, and ten more who are competent architects in the designing of such buildings, and while I do not wish to give the opinion that the formation of a monopoly should be in the hands of these men, still I bespeak a word here for the untiring efforts of, say, these fifteen men, and to ask that at any rate they be given the recognition that they deserve.

As is stated in the article, the utilizing of manufacturers' or contractors' plans, especially for the mechanical equipment, is to be strongly condemned. Those men who have standardized and studied the needs of hospitals for years can and do write specifications and make plans entirely independent of any manufacturer, but upon which any manufacturer can give his figures conscientiously and precisely.

Much has been said heretofore relative to the matter of competitions. Competitions do not bring out the best men. Only recently in a paper which was read before the first convention of architects, held in this state, I made the statement that I was not advocating a position of arrogance nor one of usurpation of the disposition of the client's funds, but did insist that the rights of the architects are clearly defined, and also stated further that I would like to see the organization take the absolute stand that none of its members go into any competition.

Less than 10 percent of all competitions which are held are held upon a purely honest procedure. Further, they are held directly in violation of the canon of ethics as laid down by the American Institute of Architects for competitions. My own experience, in former years, has been that when I attempted to go into a competition, my plans were invariably used by some local man, who had the necessary "pull" to get the work, and I did not receive even the scant courtesy of an acknowledgment, to say nothing of compensation for my ideas. This is not only unprofessional, but is contrary to ethics, and all common decency and honesty. I think I speak for all men who are devoting their time and energy to hospital work exclusively when I say that they will go into no competition, for they have all had the same experience.

Nothing further need be said relative to Dr. Bartine's article, inasmuch as it is complete in itself, but I do think that the article is not only timely, but is worthy of very careful consideration and should be followed out logically.

MEYER J. STURM.

Power Dishwashing Machines

To the Editor of THE MODERN HOSPITAL:

In your January number, under your heading, "The Hospital Kitchen," appears an article on "Hand Versus Power Dishwashing Machines." The writer of that article evidently did not have all the facts, or is not properly conversant with the methods of the most efficient dishwashers on the market.

He states: "Where a small quantity of dishes is to be washed, one basketful after another can be agitated in the water by hand by the attendant, who otherwise stands idle while the power does the agitating."

No matter what kind of a dishwashing machine is used, the operator is never idle. If a power machine is used, the operator stacks dishes in racks while the machine does the washing; but if it is a hand-power machine the operator must wash the dishes in the machine and then stop washing to unload and reload the racks.

He further states: "For a quantity of dishes not exceeding 1,500 per hour, hand-power produces the same results as power, and eliminates the cost of motor, the pump, and the current to run it."

The only hand-power dishwashers on the market are machines in which racks of dishes are immersed in tanks of water, and the refuse and grease from the dishes soon contaminates the water, which leaves the dishes greasy. Furthermore, the limited size of the tanks necessitates the use of small racks, in which dishes are piled one against another, resulting in chipping and breakage.

There are power machines that compare in capacity to hand-power dishwashers, but they are much more efficient. They wash dishes with water that is always free from grease and refuse, and rinse them with boiling water, absolutely clean. The construction of the dish racks prevents breakage. The cost of electric current to run such a machine is from two to four cents per hour.

So it will be seen that the hand-power machines are as efficient as power tank machines, but are certainly not to be compared in economy or efficiency to the more modern power dishwashers.

BROMLEY-MERSELES MFG. CO.

A movement for a new hospital has been launched at Greenville, Mich.

FOREIGN CORRESPONDENCE

Surgical Experiences of the War

These may be considered under the three heads: (1) the nature of the missiles used; (2) the character of the wounds inflicted, and (3) the methods of treatment that have been found to be successful.

NATURE OF THE MISSILES

The chief missiles employed in modern warfare are rifle bullets, common shell which bursts on concussion, and shrapnel shell. The rifle ammunition has the following dimensions and velocity:

	Rifle	Caliber, inches	Weight, grains	Velocity in foot-seconds, Muzzle	500 yards	1000 yards
British.	Mark VII	0.303	174	2440	1510	1020
French.	Lebel	0.315	198	2380	1639	1141
German.	Spitze	0.311	154	2970	1780	1090

All these bullets are sharp-nosed (the German being the most pointed) with a sloping shoulder, to diminish air resistance. The British and German bullets have a hardened lead core, with a hard sheath, open at the base; in the former the sheath is of cupro-nickel, in the latter of ferro-nickel; the nickel sheath is used because lead would be too soft to take the rifle grooves without detachment of fragments. The extremely pointed shape of the German bullet causes its center of gravity to be near the base, so that on meeting with resistance it may turn over, thus producing a more severe wound.

Shrapnel shell (so named from its inventor) is filled with spherical bullets which, when the shell bursts, are impelled forward by their initial velocity, and discharged over a wide area; it is now the chief artillery projectile. Sir Victor Horsley, F. R. S., made a series of experiments as to the effects of the British bullet and of the flat-nosed revolver bullet (Mark IV), which had been alleged semi-officially in Germany to be of a "Dum-dum"[1] or expanding pattern; and showed that both are strictly in accordance with the terms of the Hague Convention. Experimental investigations had, however, previously shown that with short range (up to 400 yards) and high velocity, the Lee-Enfield bullet (British), when passing through resistant structures, produces effects of such extent and severity as to look as if caused by explosions within the tissues. M. Tuffier, of the Beaujon Hospital in Paris, has recorded the same experience among wounded Germans, where the bullet had struck bone. In order to prove the use of prohibited bullets, such as the Dum-dum or similar pattern, they must be found in the magazine or bandolier of the combatant.

Arrows may be discharged from aeroplanes; their length is stated to be 4½ inches, and their weight 320 grains.

[1]So named from the place of manufacture in India, this bullet being used against native tribesmen, upon whom the ordinary missile has very slight stopping effect.

CHARACTER OF THE WOUNDS

A large proportion of the wounds are due to sharp-pointed, narrow bullets, which pass through the tissues, with small apertures of entrance and exit; these scabbing over and seldom requiring treatment, though the exit wound may be larger and become septic. Professor Payr, of Leipzig, has noted that perforation of stomach and intestine may occur, and yet be followed by spontaneous closure of the wound, the patient recovering under conservative treatment. Shrapnel bullets make larger orifices, both of entrance and exit, and do not so often scab over. In the navy, nearly all wounds are caused by fragments of shell, or by portions of the vessel broken off by shell, which cause the wounds to be lacerated; and these are also found, of course, on the battle-field.

Sepsis has been present to a great extent. Sir Watson Cheyne stated that all the wounds that he had come across had become septic, some of them very badly so. One cause of this has been the length of time that must generally elapse before treatment can be commenced. In former days, when actions were not on such a gigantic scale, ambulance wagons picked up the wounded on the field, and treatment could often be started soon after the wound had been received. Under present conditions this is hardly possible; for one reason, the combatants may be too far off from each other for the Red Cross badge to be recognizable; the wagons cannot be brought up so near; consequently it has often been many hours—even some days—before the wounded could be attended to. Even if there is a medical officer in the trenches, he can do little to prevent infection; the field hospital may be some miles away, and the number of wounded to be transported very large. In naval warfare, also, conditions are changed; during an action only those engaged in the fight are on deck, so long as the battle continues. The wounded are transferred to a hospital ship as soon as possible in some quick vessel, such as a destroyer; but these do not generally carry a surgeon, therefore little can be done during transit. Other causes for the occurrence of sepsis are: size and complexity of the wound, rendering thorough disinfection impossible; and absence of any attempt at disinfection in the first instance. Such is Sir Watson Cheyne's explanation of the great frequency of sepsis in wounds during the present war. On the other hand, it has been stated that ordinary pus organisms seem to have been often delayed in development, owing to the presence of anaërobes, such as the organisms of tetanus and malignant œdema and *B. aerogenes capsulatus.*

The apparently "explosive" effect of rifle bullets has already been mentioned; it has attracted a good deal of attention, and has been described by Prof. Kraske, on the German side, in similar terms. In some cases, however, the bullet had passed right through one or more organs, scarcely causing any symptoms, and leaving the general condition satisfactory.

On account of so much of the fighting having taken place in trenches, wounds of the upper extremities, particularly of the hands, have been very numerous; also those of the neck and shoulders, as pointed out by Sir Frederick Eve. He has also drawn attention to the frequency of concussion paralysis, either local and transient, or sometimes of the central nervous system and persistent; it has been ascertained that extensive degeneration of the gray matter may result without fracture or gross lesion of the spinal cord. Lieutenant T. R. Elliott, F. R. S., has described cases of this kind, which might be mistaken for functional paraplegia, or even for neurasthenia or hysterical simulation. When a shell bursts by the side of a

deeply cut trench, the sides of the trench are driven inwards, crushing, or even burying, the men in the trench. Thus the vertebral column is forcibly flexed, its ligaments stretched, and hemorrhages produced in the dorsal muscles; the spinal cord is injured at the same time. Functional nervous disorders, such as tremor, paralysis, or defects of vision, hearing, or speech, may also result from fright.

Inspector General Delorme, of the French army, has described a series of 700 surgical cases at Blaye. These were prisoners of war, the survivors of the German army left on the field after the battle on the Marne, presumably the most serious cases, deemed unfit to be moved to the German base hospital. Most wounds were serious, and also septic; their dressings had not been changed for six or seven days. Nevertheless the only amputation he found it necessary to perform was that of a single finger. This, he holds, justifies his previous teaching that the primary treatment of compound fractures and the like, however serious, should always be conservative.

Tetanus.—An outstanding feature in the surgery of the present war has been the large number of cases of tetanus, and emphysematous traumatic gangrene, commonly known as "gas gangrene." The tetanus germ is widely diffused under normal circumstances, as was found to be the case some years ago in India, when attacks supervened on such a trivial wound as is made by the needle for hypodermic injection of quinine; the reduction of resistance so caused allowing development of *B. tetani.*

Under the conditions prevailing in the present campaign, when men are living in trenches, and personal cleanliness is unattainable, wound contamination by this organism is not surprising. The character of the soil, viz., agricultural soil that has been long under cultivation, has of course increased the likelihood of infection.

Fortunately the medical authorities, both British and French, have been alive to this danger from the beginning; supplies of anti-tetanic serum were sent to the front, and the remedy has been used in all developed cases, and in cases where an attack seemed to threaten. Before long the serum came to be used prophylactically and systematically; every wounded man was given an injection at Railhead, on being sent down from the front. At the French hospitals a prophylactic injection is given to surgical patients on admission; this has had good results. M. Tuffier does not think that the prevalence has been at all due to the employment of trucks for conveying wounded, that had previously been used for horses; it is in wounds that have been soiled by earth, especially wounds of the extremities, that infection most often occurs. The incidence of tetanus appears to have been irregular in different parts of the war area even from the beginning. Sir Havelock Charles reported in the early part of November that tetanus seemed to have stopped, and gangrene to be in comparative abeyance.

With reference to the prevalence of *emphysematous,* or *spreading, gangrene,* or "gas gangrene," a report has been issued by Sir Anthony Bowlby and Dr. Sydney Rowlands, mainly the result of work done in the clearing hospitals. The bacillus of malignant œdema was identified from a typical case affecting the hand; and in a sample of earth from a trench a similar spore-bearing anaërobic organism was isolated. The gangrene has not been found to occur except in wounds of the extremities, which, however, may be of quite a slight degree of severity.

At the beginning of the war it had been expected, or hoped, that aseptic treatment of wounds might be carried out, but it was very soon found necessary to revert to antiseptic. The general plan of wound treatment has been as follows: (1) the application of the first field dressing,[1] as soon as possible, by the patient or a comrade; (2) on arrival at a field ambulance this dressing is changed; (3) at the clearing hospital the wound is cleansed, if necessary, and painted freely with an alcoholic solution of iodine; this being repeated, if required, on the journey; (4) at the base hospital simple bullet wounds are covered with dry bicyanide gauze; large and septic wounds are dressed with moist antiseptic compresses, carbolic, perchloride, creolin or lysol being used; also irrigation with hydrogen peroxide or iodine (one drachm of tincture to the pint of water).

Sir W. Watson Cheyne opened a discussion on the subject at the Medical Society of London in November, when many surgeons related their experiences. He stated (referring to naval cases) that all the wounds which he had come across were septic. For wounds that come under the surgeon's hands within twenty-four hours (or in earth-soiled wounds within 48 hours) he advised the use of chemical antiseptics to destroy the organisms; recommending liquefied carbolic acid, which kills spores in a very few minutes. The patient having been anesthetized, any bleeding is controlled by the tourniquet, or by clamping vessels; the skin is then scrubbed with one in twenty carbolic lotion and ether soap, shaved, again washed with carbolic lotion, and then covered with a cloth saturated with the same. For disinfecting the interior of the wound, the blood must be swabbed out, the wound made as dry as possible, any soiled skin cut away, and then a sponge, dipped in liquefied carbolic acid, carefully and thoroughly applied to the whole surface of the wound and all its recesses; this may have to be repeated. In the case of a large wound it may be well, after five minutes, to wash it out with one in twenty carbolic lotion, and then with saline solution to get rid of excess of carbolic acid and reduce the chance of absorption. When disinfection is completed, the vessels are tied and a drainage tube inserted, no attempt being made to stitch up the original wound. An antiseptic dressing is then applied, wool impregnated with salicylic acid being recommended, and a piece of cyanide gauze interposed over the wound, so as to keep the salicylate acid from the skin. This thorough disinfection can only be carried out at a field hospital; in the field itself all that can be done is to prevent further entrance of dirt; soluble bougies containing 1½ grains carbolic acid might be used, or gauze soaked in strong iodine solution pushed into the wound and left there. If more than twenty-four hours have elapsed, the only antiseptic treatment recommended is hydrogen peroxide, or washing out with normal saline solution. Sir Watson Cheyne holds that it is a mistake to object to strong antiseptics on the ground that they may cause a slough; if they did do so, he says, it would not matter, for it would be absorbed like any other piece of aseptic tissue. Prof. F. M. Caird pointed out that the dangers of carbolic acid poisoning and gangrene have been much exaggerated; and that such accidents are due to the use of inferior and imperfectly dissolved solutions, as moist dressings beneath an impermeable covering. Sir Rickman Godlee agrees with the antiseptic treatment, as does Sir Victor Horsley, who, however, prefers petrol as the best cleanser, and next to this alcohol. Sir W. J. Collins considers that the dry dressings of aseptic surgery are an anachronism, and, except in a few instances, out of

[1]This consists of a piece of cotton gauze containing one percent sal alembroth, tinted blue, folded into a pad, with a cotton bandage and safety pin; two such are enclosed in a khaki cover; the packet measures 4¼x3⅛x⅞ inch, and is carried in the pocket on right side of coat skirt. Latterly, according to a statement by Mr. Tennant, in the House of Commons, a small amount of tincture of iodine has been supplied to each officer and man, for immediate application.

place. Sir Havelock Charles believes that antiseptic treatment is demanded by the conditions, and that "pure aseptic surgery would be an absolute danger." Although considerable difference of opinion exists among surgeons as to the best antiseptic for wound treatment, there is complete agreement that there is necessity for some germicidal application, and that aseptic treatment is impossible.

The subsequent treatment at the base hospital or elsewhere is generally on the same lines; opening up the wound freely, washing with hydrogen peroxide or weak permanganate solution, and drainage. The organisms commonly found have been staphylococci, streptococci and proteus.

M. Tuffier, of the Beaujon Hospital, Paris, came to four general conclusions as regards wound treatment: (1) antisepsis is incontestably superior to asepsis; (2) for infected wounds, the main point to be kept in mind is efficient drainage; (3) for wounds of the limbs, the methods of conservative surgery should be followed, which is the principle accepted by the French army surgeons; each case to be dealt with on its own merits, and the risks of septicemia and gangrene being kept in mind; (4) it should be an absolute rule to close wounds. Inspector General Chavasse, of the French Medical Service, also advises antiseptic treatment, both in the first instance and for operations; he is averse to changing the dressings more often than is absolutely necessary, preferring to moisten the outside of the dressing with some deodorant antiseptic, and adding a further layer of cotton wool. For cleansing large wounds he uses oxygenated water and hot sterile artificial serum. M. Hartmann, in a recent address to the Academy of Medicine in Paris, said that he had found that iodine tincture was useful only in non-infected bullet wounds; he trusted to hydrogen peroxide or a strong carbolic acid solution.

With regard to wound treatment by the German surgeons there seems more difference of opinion than with the British and French authorities. Surgeon General O. von Angerer holds conservative views: if the wounds of entry and exit are small, he treats them as if uninfected, applying tincture of iodine and plugging with iodoform gauze; this plug is removed before applying a sterile dry dressing. For simple, uncomplicated wounds he does not use collodion (to fix harmful germs that may be present), nor does he lay open a wound, disinfect the track of the bullet, inject antiseptics or insert a drain. With extensive wounds, involving injury to large blood vessels, etc., the track must be explored, crushed tissues removed, and blood vessels ligatured; irrigation with saline solution and light plugging with iodoform gauze complete the operation. Even if a bone has been splintered he advises conservative treatment, with immobilization, provided the wounds are not large and there is not much laceration. Naturally, he insists on extreme cleanliness, using a soap containing 80 percent of alcohol (which is a potent disinfectant) for the hands, and using rubber gloves as well. Dr. Linkenhold first cleans the skin with benzine, and then applies iodine, fixed with a coating of varnish (turpentine 1, colophony resin 50, ether 50 parts), and strengthened by a single layer of muslin; this does not injure the skin, and affords more protection than iodine tincture, which evaporates during the operation.

Lieut. R. Blair treated seventeen cases of *tetanus* at the Herbert Hospital, Woolwich. Six died, nine recovered, two were still under treatment. The wounds were mostly severe, and all very dirty; four had had prophylactic doses of serum before admission, and three of these died. The treatment adopted was intrathecal injection of 4,000 units daily, using a light anesthesia. Morphine, chloral and bromide were administered; also chloretone (40 grains in two ounces of olive oil per rectum twice or thrice daily); when the chloretone was retained, it relieved the spasms for several hours.

Emphysematous gangrene, observed most often in shell wounds, where particles of clothing had been carried into the tissues, was found difficult to treat satisfactorily; the actual cautery and injections of hydrogen peroxide were found insufficient; and even amputation, in five cases, did not arrest the disease. Avoidance of tight bandages, relief of tension, scrupulous sterilization of instruments, etc., avoidance of mud contamination, and isolation of the patient are the measures indicated. M. Tuffier advocates the earliest possible extraction of foreign bodies in such cases.

A Retired British Army Surgeon.

Nurses to Be Weighed and "Observed"

Perhaps it would be of interest to the hospital to know of a new idea which I have put into effect in the University of California Hospital:

I have issued orders compelling every nurse to be weighed every four months, and if any nurse shows a loss in weight she is compelled to undergo a physical examination and is then kept under observation for some time. As a result of this observation we have dropped two nurses from our training school.

I have also adopted a method whereby the five highest standing nurses at the end of their second year are permitted to elect their training for the last six months of their course.

H. T. Summersgill,
Superintendent.

A Gorgas Medal, to be awarded annually in honor of Surgeon-General Gorgas, U. S. A., has been established by the Medical Reserve Corps Association, New York State Division. Competition for this medal is open to officers of the Medical Corps of the United States Army, the Medical Reserve Corps of the United States Army and the Medical Corps of the organized militia. Officers may submit papers on any subject of a medico-military nature. The following board has been appointed by General Gorgas to act upon papers submitted: Colonel Charles Richard, Lieutenant Colonel Champs C. McCulloch, Jr., and Major Eugene R. Whitmore, Army Medical Corps. These officers are members of the faculty of the Army Medical School and have sole authority to appoint the time that papers are to be submitted and to pass upon their merits. All inquiries should be addressed to one of these officers.

The first report of the Federal Government's study of infant mortality discloses the fact that the employment of mothers in heavy work, artificial feeding, poor sanitary conditions and insufficient earnings of fathers have an important influence on infant mortality.

Sarah M. Cleghorn, well-known investigator, has gone to the heart of the child labor belt in South Carolina, whence she sends this to the New York *Tribune:*

"The golf links lie so near the mill
That almost every day
The laboring children can look out
And watch the men at play."

—*Survey*, Feb. 13, 1915.

In view of the heart-breaking conditions of child labor in South Carolina, it seems the irony of fate that the little children not only are compelled to spend long, weary hours in the mills, but should be further crucified by watching their affluent employers enjoying the leisure made possible by the earnings derived from juvenile employment.

NEW INSTRUMENTS *and* APPLIANCES

Vincenz Mueller, Technical Editor.
Geo. W. Wallerich, Associate Editor.

The Electrocardiograph.

Though yet in its infancy, the new science of electrocardiography has already become essential to the modern diagnosis and treatment of cardiac patients. This method furnishes a direct means of examining the condition of the heart muscle during each and every phase of its action. These electric curves have revealed a number of new physical signs, especially those associated with the abnormal distribution and arrangement of the muscles of the heart.

It has long been known that minute electric currents are developed in the heart at each contraction of this organ and modern electrocardiography is the outcome of this discovery. These currents are very small and it was not until Einthoven, a Dutch physiologist, invented the "string galvanometer" that a sufficiently sensitive means for measuring these currents was available.

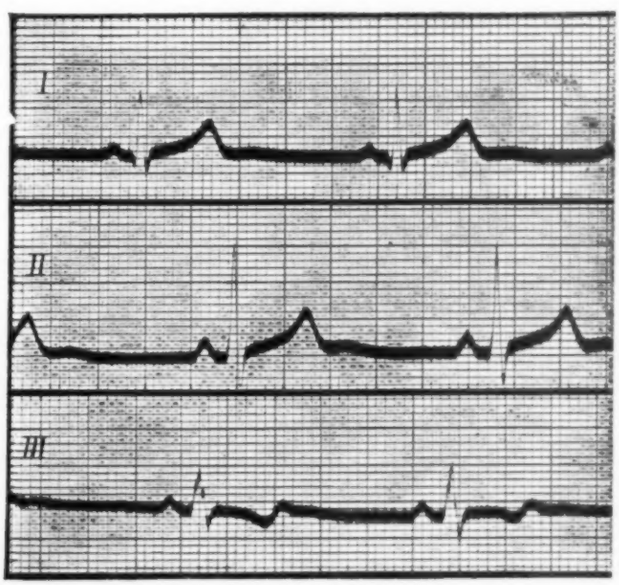
A complete electrocardiographic equipment.

The electrical currents generated in the human body consist of two kinds, an intermittent current produced at each contraction of the heart, and a continuous current produced by general cell metabolism, called the skin currents. These currents are carried to the skin surface of the body, and by placing certain parts, such as both arms and one leg, in contact with suitable electrodes, the current may be conducted to the galvanometer and photographically recorded. It is the study of the direction, the time relations, and the magnitude of these currents which constitutes the science of electrocardiography.

A complete electrocardiographic outfit consists of essentially a powerful electromagnet, the poles of which are closely approximated. In the narrow gap between the poles is stretched an extremely fine silvered glass fiber, the diameter of which is much finer than that of a single strand of spider's web and about four inches long.

An optical system, similar to that of an ordinary microscope, is so arranged in the galvanometer that the fiber is stretched between the objective and the condenser. A powerful arc lamp furnishes the illumination, and as the fiber moves in response to the varying potential of the heart currents, its image, magnified 600 times, is thrown on the lens of a camera and the fiber movements photographically recorded.

Since the magnetic poles of the galvanometer are electrostatically of the same potential, the fiber cannot be attracted unequally toward either pole, so that as the currents from the body pass through the fiber, it is forced to move in the direction at right angles to the lines of magnetic force. These movements of the fiber are photographically recorded by means of suitable cameras. Two types of camera are used, the plate and the continuous paper roll. For general use the plate camera is preferable, as by means of it the three leads from each patient may be recorded on the same plate. This greatly facilitates study of the tracings and is convenient for filing and reference. Prints, of course, may be made from these plates whenever desired. With the paper camera, a continuous roll of bromide paper or film is used, so that cardiac irregularities occurring at irregular or prolonged intervals may be photographed.



The above shows a complete electrocardiogram of a patient; lead I being from right arm to left arm; lead II, right arm to left leg; lead III, left arm to left leg.

The time intervals in which these electric changes in the heart occur are extremely small and it is necessary that they be correctly measured. To accomplish this, the current from a four-volt battery is connected through a standard turning fork standardized to vibrate fifty times per second. In the circuit with this tuning fork and battery is a rotary time marker, consisting of a motor having ten points of contact. Since the standard tuning fork makes and breaks the continuous current to the battery fifty times per second, and there are ten points of contact on the time-marking motor, the shaft on the latter revolves exactly five times per second. By simply placing a spoked disc or wheel on the shaft of this motor and so arranging it that each spoke cuts off the light at the point where the rays converge in front of the ocular, a vertical line representing the time interval is photographed directly on the electrocardiogram.

In order that the amplitude of the heart currents may be accurately measured, a millimeter scale, which has been photographically measured for the standard magnification used, is etched on the lens of the camera. As the rays of light pass through this lens the measurements of the etched scale are photographically represented on the plate by parallel horizontal lines which represent 1-10,000 of a volt. Thus, the magnitude of the current generated in the heart at any particular phase of its action is directly indicated by the amplitude of the tracings as compared to the parallel lines.

It is also necessary that the sensitivity of the galvanometer may be standardized so that the electrocardiogram of one patient may be compared with another. The standard of sensitivity generally used requires a deflection of one centimeter of the fiber in response to one millivolt of current.

Included with a complete electrocardiographic outfit is a phonocardiograph apparatus. This addition is for the purpose of recording the sounds produced by the heart. This is accomplished by conducting the sounds through an ordinary stethoscope receiver and tube to the sensitive diaphragm of a microphone. The microphone is electrically connected through the transformer and a resistance to the fiber terminal and as the varying sounds of the beating heart impinge against the diaphragm of the microphone they cause a corresponding variation in the resistance to the continuous current flowing through it, and the fiber moves synchronously and in direct proportion to this resistance. Not only is it thus possible to record the volume of sound, but the pitch or tone is also indicated and the exact position of any sound or murmur can be settled in respect to its position in the main cycle of the heart.

To facilitate the simultaneous recording of both phono- and electro-cardiograms on the same photographic plate a double fiber case, containing two independently operated silvered glass fibers, is suspended between the poles of the galvanometer. This is a most important addition to the outfit and is of the greatest value in studying the heart sounds.

The Cambridge electrocardiographic outfits, manufactured by the Cambridge Scientific Instrument Company of Cambridge, England, have already been installed in a large number of both European and American institutions. This instrument is of very robust construction, especially as regards the arrangements for protecting the delicate glass fiber. The control board of the apparatus is another very convenient feature, as it centers all the different manipulations for operating the outfit in this one board, which is placed convenient to the hand of the operator on the front of the apparatus.

Another New X-Ray Tube

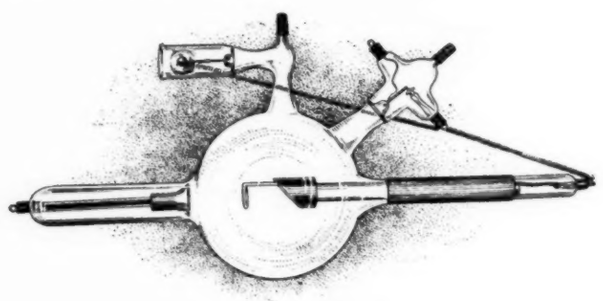
Every experienced operator of x-ray apparatus is familiar with the annoying habit that tubes have of becoming "cranky," owing to imperfect vacuum control. Some tubes average better than others, but the element of uncertainty as to how they will "take" the current has always been present, and results vary accordingly.

The announcement that this difficulty has been overcome will, therefore, be received with no little interest by all who can appreciate an important step forward in roentgenological equipment.

Experiments have been continually under way in the Snook-Roentgen laboratories at Philadelphia for more than two years with a view to developing an x-ray tube in which the operator could control the vacuum at will. The result is now brought to the attention of the public in the new hydrogen tube. Practical day-by-day work in prominent hospital laboratories for many months past would seem to indicate that the announcement is not prematurely made and that the new tube does, in fact, possess such characteristics as insure a warm welcome in every laboratory where uniformity of result and economy in upkeep receive due consideration.

An interesting problem in electro-physics is involved in the principle by which the vacuum in the hydrogen tube can readily be controlled at the will of the operator. A certain metal tube, when heated to redness by a current of approximately twenty milliamperes, permits chemically pure hydrogen to diffuse through it by osmosis—but is still impermeable to atmospheric air. By an ingenious utilization of this principle, hydrogen can be made to enter into the vacuum in minute quantities, or to actually pass out therefrom, raising or lowering the vacuum in accordance with the length of time the current is passed through either the raising or lowering attachment.

Over the entire range of the practical working vacuum of any x-ray tube, the vacuum of the hydrogen tube can be readily raised or lowered; about one inch of equivalent parallel spark gap for each twenty seconds of corresponding use of the regulator.



The Snook Hydrogen X-ray Tube.

Since hydrogen is the lightest of all known gases, and does not readily combine with metallic surfaces, the new tube heats less and is far more stable than any of the former types supplied with regulators that contain substances capable of evolving oxygen, either free or combined. Since no other gas than chemically pure hydrogen is permitted to enter the tube, the vacuum is remarkably steady and dependable.

Low electrical resistance accompanied by high penetration enables the hydrogen tube to "take the current" well. Owing to relatively small fluctuation in resistance there is little danger of trouble from "puncture" or "flashover."

The high penetration is remarkable, comparative radiograms invariably showing one Benoist number higher than any other gas tube under the same operating conditions.

The hydrogen "regulator" can be recharged indefinitely without repumping the tube.

In addition to the perfection of the standard type of hydrogen tube, an air-cooled type is also announced that permits regulation of vacuum by exactly the same methods.

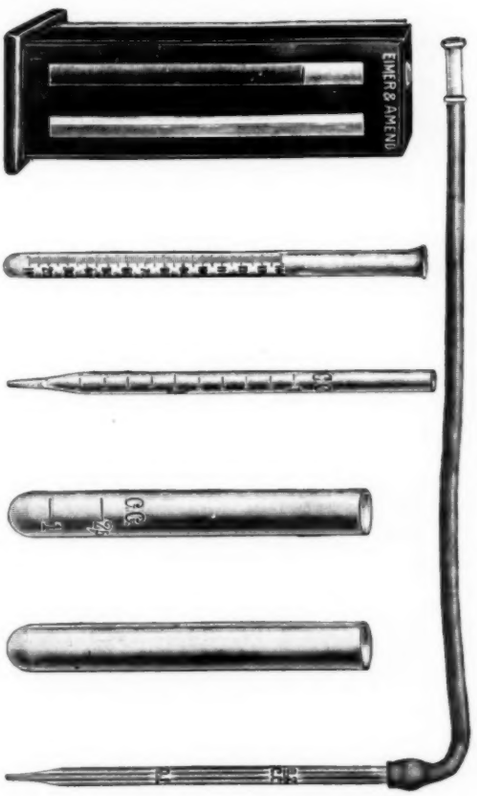
It is believed that the air-cooled hydrogen tube will serve every possible purpose that can be desired in the busiest of hospital laboratories. Its use permits long fluoroscopic work to be punctuated by making radiograms, as many and as often as desired. Deep therapy, in massive doses, alternated by fluoroscopy and radiography, can be made a matter of daily routine.

Micro-Saccharimeter for Estimating Sugar in the Blood

BY DR. A. A. EPSTEIN

The micro-saccharimeter is an elaboration of the Sahli-Gower hemoglobinometer colorimeter. The apparatus has proven desirable, especially in clinical work, with children and adults, inasmuch as only a small quantity of blood is necessary and the examination can be completed in from seven to ten minutes.

Dr. Epstein reports that his method is an adaptation of the one devised by Lewis and Benedict (but only on a small scale) for estimating the sugar contents in blood. The original method, however, although admirable in point of simplicity and accuracy, entails the use of 2cc. of blood and the employment of costly colorimetric apparatus. To overcome this drawback and to render the estimation of blood-sugar more suitable for general clinical and laboratory work, Dr. Epstein adopted the Sahli-Gower hemoglobin-colorimeter, with the addition of suitable color standards. By this means, he found it possible to work with small quantities of reagents and to estimate with precision the amount of sugar present in 0.2cc or even in 0.1cc of blood.



Dr. Epstein's micro-saccharimeter.

This small quantity of blood is easily secured from the tip of the finger or the lobe of the ear, by means of the blood pipette, and is discharged into the tube containing the fluorid solution.

The Epstein micro-saccharimeter consists of the parts illustrated here, which are put up in a case, and in addition the three solutions required, picric acid, sodium carbonate and sodium fluorid. Full directions as to the technic are furnished with the apparatus.

Those who already possess a Sahli-Gower hemoglobinometer need only purchase the color standards A and B; boiling tubes; tube graduated at two marks 1cc and two 5cc; pipette with marks at 1/10 and 2/10, with rubber tube and mouth piece; Mohr's pipette, graduated in 1cc in 1/10; a small funnel; a dropper with rubber bulb, and the solutions previously mentioned.

Improved Douche for Use in Obstetric Cases

BY DR. W. D. INGLIS

Various types of uterine douches have been offered to the profession in the past, but most of them have one serious defect, which is that they are not sufficiently large to allow a free return flow of the solution and therefore soon become clogged with blood clots.

This new instrument is chiefly designed for intra-uterine irrigation, with hot solution. It is so constructed that the inflow is directed to the sides of the uterus, and the outflow is so large that it is practically impossible for the instrument to become clogged. The return empties outside of the vaginal tract, therefore solutions of 120° to 130° Fahrenheit may be used upon a conscious patient with

Improved Douche for Obstetric Cases.

little discomfort. In postpartum hemorrhage this is very desirable, because it is well known that there are few measures that can be employed which are equal to heat as a stimulant to a so-called atonic uterus.

The illustration does not give a correct idea as to the size of the instrument. The diameter of the outer tube is 20mm. and that of the inner tube 8mm., and the total length is 38cm. A return flow catheter of this type in the delivery room in the hospital will afford the obstetrician an effective means of combating the dreaded hemorrhage which sometimes follows labor.

Pocket Flash Light

A new pocket flash light has recently been put on the market, which has several good features not possessed by any of the many types which have been offered in the past.

The best feature is the convenient shape, an imitation of a fountain pen, and its small size, 5¼ x ⅝ inches, just

Beacon Ideal Fountain Light.

a little larger than a good-sized fountain pen. The vest pocket clip acts as the contact and when carried in the pocket, the same as a pen, with the cloth of the pocket between the clip and the casing, contact is impossible, thus preventing useless consumption of the battery in the pocket, as very often occurs with the ordinary pocket light.

Following a number of crimes committed by paroled patients of the Illinois state hospitals for the insane, the state board of administration has issued an order revoking all existing paroles and directing that hereafter no patient of any state institution shall be permitted to go outside or beyond the institution grounds unless accompanied by a state or court official.

QUERIES and ANSWERS

Hours for Admission of Patients.

To the Editor of THE MODERN HOSPITAL:

Patients are brought or sent to our hospital at all hours of the day and night, although we have a rule that they will be received only between 9 a. m. and 5 p. m., except in emergency. Our busiest time for receiving patients is between 8 and 12 p. m. Is there any way to stop this, and is it fair to require our doctors to send in their patients between stated hours? A few of our board favor abritrarily refusing to accept patients that come in outside of hours—except in real emergency.

T. W. B., New England.

In other words, you and a few members of your lay board propose to decide for your doctors whether and when their patients need the hospital. Let us get this problem straight; it is a commonly known fact that really sick people get worse as night comes on; fevers rise, symptoms increase and often straighten out a diagnosis that may have been obscure. Often the doctor is making his round of visits just before night and can't be found; hence it is after supper—7 or 8 o'clock—before he sees the patient whom he is asked to see in a hurry. He finds conditions such that the patient should be got to the hospital as soon as possible; often the delay until morning may be hazardous.

Then again, the husband or father is away all day, and, though the doctor advised the hospital early in the morning, the folks at home cannot decide alone; that means night, long after dark, before things can be arranged.

The inconvenience of the present system should be put frankly to your doctors and they should cooperate with you as far as possible. Then the rest of the cure lies in having enough nurses and other help to handle the patients that come in. The ups and downs of sickness cannot be arranged by rules, and if you are going to run a hospital, the institution must accommodate its affairs to the exigencies of sickness, and not the other way about. You have no business to have stated hours for receiving patients, so far as your medical staff is to be bound by such rule.

Repainting the Hospital

To the Editor of THE MODERN HOSPITAL:

We must repaint almost our entire hospital this spring and are now making plans for it; our painter, one of our townspeople in the painting business, says we must remove all the paint over the place or he cannot guarantee a good job. Is this true, and how shall we proceed?

AN OHIO SUPERINTENDENT.

The best plan, of course, is to hire your own painter and make him work under your orders. There are so many men all over the country looking for employment just now that there should be no difficulty in finding an unemployed painter who knows his business and who can hire any number of helpers who can work under him. Flat work paint, such as that on your walls, need not be removed for your new painting operations this spring. You should go over your walls, before they are painted, with warm water and a weak solution of green soap, and wash them down thoroughly, and then paint over that. You cannot put fresh paint over varnish, as, for instance, on your woodwork and your shellacked floors. The varnish and paint must be removed from the woodwork and from the floors before you paint again. I should think it would be a rather costly proceeding for you to have your painting done by a man in the painting business. Most of those people pay scale wages and you are thinking about getting your work done at the time that they are busiest, so that it is going to cost you more than at any other time of the year. I am quite sure that the best way for you to do is to hire your painters and do your own work. The unions do not object to hospitals hiring mechanics in the best way they can, without reference to the scale—largely for the reason that hospitals hire their men by the year and find work for them at seasons when they would not find work on contracts and at scale prices.

Hospital for City of Six Thousand.

To the Editor of THE MODERN HOSPITAL:

We have a city of about 6,000 inhabitants and no hospital. The medical society, of which I am president, desires to make evident the need of such an institution to the public. Where may we obtain literature on the construction and operation and community need of hospitals so that the doctors may be able to present their subject properly? We should appreciate any suggestion that you will be able to give us.

PRESIDENT OF A COUNTY MEDICAL SOCIETY.

The census of 1910 gives the population of your city as 4,698. I have no doubt you have at least 6,000 population by this time and I imagine you will continue to grow. You have twelve physicians, according to the American Medical Directory, and you have no hospital—as you say.

We have become accustomed to figure in this country that a hospital bed is needed for every 150 of the population. If that is true, and we believe it to be a conservative rather than an exaggerated estimate, you should have 40 beds in your city, and I think by all means you ought to have a hospital that will provide for 40 beds now, and it ought to be built in such a way that an additional wing can be built at any time, to complete a very neat architectural design. You could build it, for instance, in the shape of the letter "L," facing on two streets, if you please, and at some later day you could build a second wing, making a "U" in shape. For the present you would build one of the horns of the "U" and the base, the base to be the administration part.

There is no doubt that a hospital such as we are thinking about would be of immense advantage to your town aside from its emergency value in caring for the actual sick. As the matter stands now you are without the assemblage of such hospital equipment as an x-ray plant, a bath department and the facilities to do surgical operations according to the most scientific modern methods. You have no nursing center in your town, indeed you can have no real health center because the health activities of a community must work out of some hospital.

Without a hospital your medical men cannot progress in the way they are entitled to do; they don't get the experience in the care of patients under the careful and trained administration of a hospital, and without this experience they are not able to give to your people even in private practice that high order of professional service to which people of today in every enlightened community are entitled. I think I should impress this particular point on your people, if you will permit me the suggestion. A hospital will give training and opportunity for practice to the medical men in that community such as they cannot

hope to have without such an institution, and in proportion as you have a good hospital or none at all just in such proportion will you have an able and up-to-date medical profession in your city.

Another point is that suppose one of your citizens is taken suddenly with an appendicitis, or, let's make it a keener emergency and let's say it is a ruptured extra-uterine pregnancy. Of course, the patient could be rushed into the private home or operating room of some physician, but the operator would not have the facilities to do the best operation that he knew how to do; he would not have the trained nursing; he would not have that expert care in the asepsis of his operating paraphernalia that a hospital could provide, and the net result would be that the patient would more than likely die, not because a bad or poor operation was performed, not because the surgeon was unable to perform a good operation, but because the people of the community had not provided him with the proper auxiliary for good surgery.

I think if these points are driven home to your people of the better class, the leaders of thought in the community, those who have money and influence, there is no doubt in my mind that they will back up and support your medical society in the creation of a proper hospital.

A 40-bed hospital ought to be built for about $80,000. You ought really to have a hundred thousand. That would give you plenty of money for equipment and the price of the ground. I think, though, that you ought to make some sort of arrangements for the permanent support of your hospital in the form of annual subscriptions from your well-to-do people, covering a period of years.

Such a hospital as I am thinking about should be self-supporting in the average American community or it should cost so little in the shape of a deficit that your people would not feel the burden at all.

Worthless Lumber on the Market

To the Editor of THE MODERN HOSPITAL:

We have had occasion to buy a lot of lumber recently, for shelves, for benches, for partitions, and some for flooring. The lumber seems to warp badly after it is on for a time; rosin or some discoloring substance comes through the paint; the floors and the tongue-and-grooved partitions open up and the whole result is bad everywhere. Is there no good lumber to be had, and if so, where can we buy it? Someone has suggested that we can buy good second-hand lumber from the wreckers in the large cities, and that it is the best because it is well seasoned.

AN IOWA TRUSTEE.

Lumber has jumped in price until it is almost prohibitive now. Good, well-seasoned lumber that will not contract under the heat of a hospital costs from $60 to $100 a thousand feet. Such prices are certainly prohibitive. The trouble is that lumber is rapidly disappearing and those who have it to sell find a ready market at exorbitant prices; consequently lumber mills are working overtime and nearly all of them have equipped great drying kilns where they wheel in carloads at a time. The physical conditions are not good for drying under such circumstances, and the result is that the pieces are dried only on the outside. As soon as the lumber is laid in place in the hospital it begins to dry naturally, by the evaporation of its native water, and there can be only one outcome, the discoloration of the paint, of which you write, and the warping of the timbers. No doubt the wreckers of old buildings take out lumber that, under ordinary conditions, would be ideal for building operations, but the trouble is that this second-hand lumber is full of nails and therefore difficult to handle. Old buildings used to have very heavy sleepers and studdings, two by eights and two by twelves, and a good deal of excellent flooring can be picked up from the second-hand dealers. If you could take this two-inch stuff and have it sawed again and planed, it would make the best possible lumber you could get hold of, but the sawmills will not saw it for you, because of the nails, and it really cannot be handled unless you can use it just as the pieces come. Your alternative is to do the best you can with the poorly dried stuff on the market or pay the exorbitant prices for thoroughly dried lumber.

Decorations for the Walls

To the Editor of THE MODERN HOSPITAL:

So many of our patients complain of the monotony of the walls and ceilings of our private rooms; some of them count the specks on the ceilings, others conjure up all sorts of grotesque forms in the checks and cracks in the paint. Years ago we removed all pictures to conform with sanitary requirements. Can't we do something in the way of decoration to overcome the everlasting sameness of the walls and ceilings? ONE WHO WANTS PICTURES.

The monotony of the scenery in the private rooms is a very common fault in American hospitals and probably in hospitals throughout the world. I think the pendulum has swung to the far extreme, and it doesn't seem to me such an outrageous violation of the proprieties of asepsis if we were to have a few good pictures on the walls of private rooms, provided they were thoroughly cleaned after each patient went home; the trouble is that that isn't done; the pictures are left hanging from one year to another, and the dust is allowed to accumulate; that is the reason why we have gone to the other extreme. Perhaps it is just as well; but something else really can be done about this question of diversion for patients in bed. There are great numbers of prints, etchings, engravings, chromos and color types of all sorts to be had. I saw this problem settled in an extremely good hospital not long since in the following fashion: a number of well selected prints were chosen and good places marked out for them on the walls; they were then pasted on with the same sort of paste that wall-paper hangers use, just cooked starch; it required a good deal of taste and care to paste them smoothly, so that there were no wrinkles. After they had dried well, the superintendent bought some very pretty stenciling paper that answered extremely well for an imprint of a frame, and the painter stenciled the frame around the picture. After that was dried well the painter went over the whole with a very thin coat of copal varnish; that is the same kind of varnish that artists use to cover their paintings with. It is perfectly transparent, does not give a high gloss and is a perfect protection when the walls are washed.

Rules for Staff Men

To the Editor of THE MODERN HOSPITAL:

Each one of our doctors seems to feel that he is a law unto himself in the hospital, and insists on making rules for each unusual incident that comes up; are there any rules anywhere that will cover all occasions where the staff is concerned, and is there any way by which the doctors can be made to obey rules even when they are made?

T. B. A., Louisiana.

There are no rules that would be of service in any hospital except the one for which they were made. Hospital rules must always be predicated on individual institutions and conditions. The point you bring up is a vital one. Without system no institution is really worth while, and if the doctors, the class of people most of all interested in good hospital administration, will not help to preserve system and proper administration methods, such methods cannot be made effective because, in a final analysis, every step of every piece of work finds its way back to the doctor and his patients. It seems to me the best way to do is

to draw up what you think are proper rules for your particular institution, considering everything; then call your medical staff together and ask them to help you create a set of rules for the government of the institution, on its medical side; tell them that "just for a framework" you have drawn up something, and submit your rules to them. Go over your draft with your doctors and it is my experience that doctors will be entirely reasonable about rules, except when one of their own cases is involved at the moment; and it is my experience that they will help you create a workable, effective and efficient set of rules. After these rules have been agreed upon, get the doctors to sign them with their approval, for the purpose of submission to the board of trustees. Then take the rules to your board and explain the situation to them, and get them to approve them. Now don't you see what you have to work on? You have a set of rules created by the doctors themselves, which you, as superintendent, have approved, and which have gone into the establishment of the hospital under the approval of the board of trustees. Now what is to happen if one of the doctors has some special case up for which he is asking unusual and unreasonable service? He is in open violation of a rule which he himself helped to create, and which has been approved for the working purposes of the institution by the board of trustees; and if the doctor persists in his violation of these rules, place the matter fairly before the board of trustees and let them determine whether they, or whether an individual physician in the hospital is running the institution.

Team Work in the Hospital

To the Editor of THE MODERN HOSPITAL:

I have just taken possession of a fifty-bed hospital as superintendent. I find a total absence of the "team work" that THE MODERN HOSPITAL has so often alluded to. Nobody seems to want to help anybody else, and each one seems to take a delight in embarrassing the work of everybody else. I am almost at my wit's end; what am I to do?

A DISCOURAGED SUPERINTENDENT.

Probably the reason why your board employed you was to straighten out the very condition of things to which you refer. The board members had probably not been able to even diagnose the case, and they thought that perhaps you might be able to do so. A competent superintendent does not lose courage in the presence of an emergency of that sort, but just begins to get interested when there is something difficult to do. Don't you think you had better look at your job in that way a little bit? I think the thing for you to do is to go to your board, give them a diagnosis of the case, tell them what you are finding and ask them frankly whether they will support you without reservation in the things that you may find it necessary to do. Be sure you have this out with them conclusively. If any board member has a pet in the hospital on the pay roll that he proposes to keep there, no matter what provocation, you may just as well admit at once that you can accomplish nothing; but if your board agree unreservedly to stand by you, then the thing for you to do is to cut out the sore with a knife—there is no other way. The first evidence you get of disloyalty, or want of cooperation, send for the offender and tell him or her just what you have found, and that you propose that it shall stop, and stop at once. If it is not stopped at once, dismiss the party, and pay him off immediately. He will run to his friend on the board; if he gets no satisfaction his case is settled. The repetition of that performance about three times will pretty nearly put your hospital into decent shape, but I would keep on dismissing people until I did get cooperation and team work. You certainly will not succeed in your administration without it.

THE HOSPITAL KITCHEN

Any questions regarding equipment or other matters connected with the kitchen and dependent departments of food storage and service will be answered in this department. Address communications to THE MODERN HOSPITAL, Kitchen Department, Metropolitan Building, St. Louis.

The Object of This Department

This recently created department is expected to open a forum for discussion of all questions relating to the kitchen, storage and laundry departments in both the larger and smaller hospitals. The views and experiences of many persons having different problems in different classes of institutions, public and private, will be of the greatest value in disseminating information interesting to those who have this section of the hospital under their jurisdiction. It is therefore hoped that readers will communicate anything in the nature of improvements in the service departments, which may have been evolved in their institutions, so that their experience may benefit others. Any problems needing solution, submitted to the editor of this department, will be answered from the best sources of information obtainable on the particular subject, and any discussion of anything published in these columns will be welcomed, because the object of The Hospital Kitchen Department is, not dogmatically to lay down the law, but to provide a means for the dissemination of the best data obtainable from every source, and this object can best be attained by the cooperation of all those most interested in the subject.

Utensils for a New Hospital Kitchen

The lists of utensils furnished for the various kitchens of the new Cincinnati General Hospital, which appear in these columns, is not published as a model of what ought to constitute the equipment necessary to start the kitchens of a new hospital, but rather as a complete list of the things which may be wanted in a kitchen after it is started.

It would seem to be better in a new hospital to confine the lists at the start to the absolutely necessary articles, leaving a part of the appropriation available for adding to the list after the kitchen is running.

Experience teaches us that all cooks, male and female, have various ideas as to what utensils they want to produce the same culinary results; consequently, no matter what list of utensils is provided, it is almost certain that the new cook will not want a substantial part of it and will bemoan the absence of things necessary from his or her personal viewpoint. If, however, only the absolutely essential things are on hand, additions may be rapidly made to suit the demands of the cook in charge of each kitchen, provided these demands are within reason in the opinion of the superintendent.

Especially are the ideas of the persons brought up in the rough schools of public institution kitchens different from the views of those accustomed to the dainty kitchen

work of the diet kitchen or even the smaller private hospitals. The handling of foods in quantity precludes many of the niceties possible when comparatively small amounts are handled; and in consequence the ideas as to the utensils necessary also vary according to the school in which the person actually doing the cooking has been brought up.

Of course there are many utensils which must be provided in every kitchen in certain numbers in order to produce the food to be served, but once that limit is reached, the choice of the additions advisable will vary to some extent with every different person in charge of the kitchen. As the risk of having things on hand which are not wanted, coupled with the risk of having to buy things not provided, causes a double expenditure it would seem to be more prudent to proceed in the manner indicated above, than to decide in advance everything that the cook will need, instead of letting him or her decide that point as the necessity arises.

List of utensils in main kitchen of the Cincinnati General Hospital:

4 retired hotel plain ladles, Nos. 100-200-300-400.
4 retinned hotel pierced ladles, Nos. 100-200-300-400.
2 retinned hotel skimmers, No. 180.
2 retinned hotel forks, 20 and 24-inch, Nos. 200-240.
1 retinned cake turner, No. 150.
24 retinned forged basting spoon, Nos. 12-14-16-18.
2 Chinese strainers, Nos. 75-90.
2 French strainers.
2 hotel colanders, long foot, 9-13 inches.
2 18-inch hotel potato friers with wire basket.
6 extra heavy tin dish pans, 2½ gallons.
6 extra heavy tin dish pans, 3½ gallons.
8 ribbed oven pans full size of oven, 22-gauge black steel.
16 ribbed oven pans full size of oven, 22-gauge black steel.
1 extra heavy tin grease strainer, long handle, 14-5 inches.
2 spice boxes, 6 compt., with handle.
6 retinned flat skimmers, Nos. 12-15.
12 retinned plain ladles, Nos. 9-12.
6 retinned pierced ladles, No. 12.
2 flour sieves, wood frame, 16-inch.
6 retinned French gravy ladles, No. 6.
6 tin apple corers.
2 hotel graters, iron bound, 9x13-inch.
2 Peerless nutmeg graters.
4 retinned egg whips, 15-18-inch.
2 Dover egg whips, heavy.
2 Surprise egg whips.
2 wire egg whips.
4 skimmers, 5½ and 6½-inch.
6 hotel pot chains.
2 wire broilers, 10x14½, No. 23.
2 wire broilers, 11x15, No. 24.
2 wire broilers, 12½x16½, No. 25.
1 Sterling bread slicer, No. 50B.
2 24-inch wood chopping bowls.
2 double mincing knives.
2 maple rolling pins, 23x3 inches.
2 maple potato mashers, 17x5 inches.
6 maple wood spoons, 13-inch, No. 2.
6 maple wood spoons, 15-inch, No. 3.
6 maple wood spoons, 18-inch, No. 4.
6 maple wood spoons, 22-inch, No. 5.
1 rapid lemon squeezer.
6 butcher knives, 8-10-12-inch.
2 boning knives, 6-inch.
1 splitting knife.
1 ham slicer, 10-inch.
8 cook's knives, 6-8-10-12-inch.
6 spatulas, 6-8-12-14 inch.
3 carving forks, No. 67544.
1 pot fork.
6 short handled kitchen forks.
12 vegetable knives.
12 Champion vegetable peelers.
2 meat saws, 24-inch.
2 butcher cleavers, 8-10-inch.
1 lamb cleaver, 9-inch.
2 broiling forks, 12½-inch.
10 French fry pans, Nos. 20-24-28-32-36.
1 grease can, 12-gallon.
1 Clinton vegetable slicing machine with grater.
1 Joseph universal cocoanut grater.
3 compartment fireless cooker, No. 4, duplex.
1 wooden table, iron-pipe legs on casters, same height as range.
6 sugar barrels, with metal covers.
6 sugar ½ barrels with metal covers.
12 high stools with backs.
1 Kent knife cleaner.
1 bottle washer.
1 ash sifter.
12 soap trays.
1 pantry ladder.
3 pair ice tongs.
6 ice awls.
1 hanging scale, 2 oz. to 60 lbs., for weighing garbage.
1 potato peeler, Sterling No. 20, with motor.
1 Bonanza apple peeler and corer.
1 Lee bread crumber No. 30, for power.
2 Peerless ice cream freezers, 12-quart, coil refrigeration with motor, with ice crusher, buffer and grindstone attachments.
1 Grant butter cutter.
1 coffee mill, Universal, for power.
2 berry washers, wire.
1 salad washer, No. 3.
1 Buffalo meat chopper, No. 18.
2 hardwood salt boxes, 1-quart.
2 cutting boards, No. 3.
1 batter kettle.
6 wash basins No. 1300, Puritan.
4 egg slicers.
4 flour cans, 25-lb. capacity.
4 sugar cans, 10-lb. capacity.
6 japanned match boxes.
1 sure-cut can opener.
2 corkscrews.
1 grapefruit knife.
1 set skewers, 4-12 inch polished steel.
1 set larding needles.
1 butcher's steel, 12-inch.
2 Guernsey mixing bowls, 15-inch diameter.
2 Guernsey mixing bowls, 11-inch diameter.
1 set waffle iron, 6 pans, No. 12.
12 galvanized iron pails, 12-quart.
12 border molds, round and oval.
12 jelly molds, round and oval.
12 long-handled dust pans.
1 rapid lemon squeezer.
12 10 to 1 quart Gilchrist ice cream dishers for serving vegetables, etc.
12 brown earthenware bean pots, 1-gallon.
1 block scraper.
1 ice cream can scraper.
1 palette knife, No. 927.
1 potato eyer.
1 U. S. slicing machine with pedestal.
4 heavy tin glass carriers.
12 dish tote boxes, 30x18x4 inches, to fit wagons.
2 fry baskets, 8-inch.
3 flour dredges, No. 2 Kreamer.
3 flour dredges, No. 1 Kreamer.
24 retinned table and tea spoons.
72 ladles, No. 360.
144 brushes for dishwashing, "Keep Clean."
3 No. 40 Duplex fireless cookers.
1 Ferain mechanical can opener.
36 cheese molds.

Aluminum ware for main kitchen:

1 stock pot with faucet and strainer, 25-gallon cap., No. 840.
1 sauce pot with loop handles, 60-quart cap., No. 656.
1 deep stock pot, loop handles, 40-quart cap., No. 814.
1 deep stock pot, loop handles, 25-quart cap., No. 812.
2 stock pots, with loop handles and covers (shallow), 8½-quart cap., No. 710.
2 sauce pans, with loop handles, without covers, 6½-quart cap., No. 549.
2 sauce pans, with loop handles, without covers, 4½-quart cap., No. 548.
2 sauce pans, with loop handles, without covers, 2½-quart cap., No. 707.
3 sauce pans with long handles, 8-10 quart cap., No. 505.
2 sauce pans with long and bail handles, 5-quart cap., No. 440.
2 sauce pans with long handles and a loop, 15-quart cap., No. 444.
2-round braisers, 3½-quart, cap., No. 489.
2 cruller pans, 8½-quart cap., No. 770.
2 fry baskets for above, 8-inch diameter.
1 circular rack, No. 840R, 20-inch diameter (for inside kettles).
2 circular racks, No. 832R, 12-inch diameter (for inside kettles).
2 double boilers, No. 919, 8½-quart cap.
2 double boilers, No. 920, 11-quart cap.
1 double boiler, No. 917, 4-quart cap.
2 double boilers, No. 922, 17½-quart cap.
2 heavy frying pans, No. 414, top diameter 14 inches.
2 colanders, 11½x5 inches, 3½-quart.
1 dozen griddle cake covers, 6-inch diameter, No. 200.
1½ dozen drip pans, 18½x12½-inch top measure, No. 315.
1½ dozen drip pans, 14½x10½-inch top measure, No. 312.
2 asparagus cookers, No. 323, 7½-quart cap.
2 funnels, 2½-pint cap., No. 305.
4 fruit funnels, No. 306, 2¾-pint cap.
6 measuring cups, No. 180, ½-pint cap.
1½ dozen baking pans, No. 246, 23½x13¾.
1½ dozen baking pans, No. 245, 18¾x12¾.
1½ dozen deep pudding pans, No. 82, 2-quart cap (these to be sent to wards).
1 set measures, 1 pint to 4 quarts, Nos. 191, 192, 193, 194, 195.
2 soup strainers, No. 914, 2-quart cap.
3 heavy dredges for flour, 5x4½ inches.
3 heavy dredges for sugar, 5x3½ inches.
2 tea kettles, 2-gallon cap.
6 No. 891 pint bowls, 1-quart, 4⅝x2¾x2¾ inches.
6 shallow bowls, No. 292, capacity 1 quart.
8 deep bowls, No. 293.
6 flat plates, No. 895, 8¾x⅞ inches.
6 straight cups, capacity 1 pint, No. 210.
6 cast ladles, No. 360.
1 sponge or egg kettle, 24-quart cap., No. 870.
1 sponge or egg kettle, 30-quart cap., No. 871.
1 sponge or egg kettle, 11-quart cap., No. 867.
For delivery to wards:
17 coffee bottles, 6-quart cap.
8 coffee bottles, 2-quart cap.
10 coffee bottles, 1-quart cap.
17 bottles for carrying hot milk, 1-gallon cap.
18 bottles for carrying hot milk, 1-quart cap.
6 dozen trays, 21x15 inches, No. 349.

List of utensils for bakeshop of Cincinnati General Hospital:

1 Hunter flour sifter, No. 12.
1 wood double frame flour sieve, copper wire, 14-inch.
1 wood double frame flour sieve, copper wire, 16-inch.
1 wood double frame sugar sieve, copper wire, 14-inch.
1 sugar dredge, No. 1 Kreamer.
1 flour dredge, No. 2 Kreamer.
24 muffin cards, 6-hole, No. 120 Puritan.
1 iron-bound hotel grater, 9x13-inch.
1 Peerless nutmeg grater.
1 bakehouse scale, tin scoop, ¼-oz. to 8-lb.
2 retinned egg whip, 15-inch.
2 wire skimmers, 5½, 6½-inch.
1 double lip custard dipper, No. 1.
4 bakers' flour brushes.
12 Rubberset pastry brushes, 2-inch.
2 maple rolling pins, 3½-inch.
1 potato masher, 4-inch, maple.
2 dough scrapers.
4 wood paddles, 12½, 15-inch.
2 wood spoons, 18, 22-inch.
1 Rapid lemon squeezer.
3 bakers' peel and pole, 6, 8, 10-inch.
1 steel biscuit brake.
1 Triumph cake mixer with motor.
1 marble top table, 6x2½ feet (4-foot marble).
2 butcher knives, 8, 10-inch.
3 cook's knives, 8, 10, 12-inch.
4 pallet knives, 6, 8-inch.
3 pallet knives, 10, 12, 14-inch.
3 vegetable knives.
1 butcher's steel, 14-inch.
1 mixing bowl, wood, 24-inch.
4 white earthen mixing bowls, 15, 17-inch.
24 12x4½-inch, 6X tin pans (Pullman).
12 bakers' sheets, 18x24x1-inch, open one end.
12 Russia iron roll pans, 6 tubes each.
1 cruller pan with wire basket, No. 1180.
5 4X tin pan, 14, 17, 21, 30, 40-quart.
1 seamless colander, No. 217.
1 Chinese strainer, No. 75.
1 French wire strainer.
1 retinned plain ladle, No. 100.
2 cake turners, No. 160.
8 retinned basting spoons, 10, 12, 14, 16-inch.
18 pudding pans, 6X tin, 10-quart, No. 160, Puritan.
4 flat skimmers, Nos. 14 and 15.
6 plain ladles, Nos. 9, 12 and 13.
2 French gravy ladles, No. 6.
3 biscuit cutters, 2-inch.
3 doughnut cutters, 2½-inch.

Aluminum for bakeshop:

3 only tin biscuit cutters, 2-inch diameter.
3 only doughnut cutters, 2½-inch diameter.
3 dozen baking pans, 23⅛x13¾, No. 247.
2 dozen brown bread cans, 4½x3½x4¾, No. 111.
10 dozen bread pans, 18½x5¾x2⅝, No. 101.
2 dozen corn cake pans, 3x⅝ (12 to card), No. 102.
2 dozen muffin pans, 2-inch (12 to card), No. 166.
1 sponge or egg kettle, 24-quart capacity, No. 877.
1 sponge or egg kettle, 16-quart capacity, No. 869.
1 candy kettle, 6½-gallon capacity, No. 666.
2 ladles, 12⅜-inch handle, No. 360.
1 sauce pan, 2½-quart capacity, No. 507.
2 sauce pans, 6½-quart capacity, No. 509.
1 sauce pan, 11-quart capacity, No. 629.
1 sauce pan, 15-quart capacity, No. 650.
1 sauce pan lid, 7-inch inside diameter, No. 587.
2 sauce pan lids, 9-inch inside diameter, No. 589.
1 sauce pan lid, 10-inch inside diameter, No. 590.
1½ dozen dairy pans, 5-quart capacity, No. 398.
1½ dozen deep pudding pans, 5-quart capacity, No. 85.
1½ dozen deep pudding pans, 3-quart capacity, No. 83.
5 dozen deep pie plates, 10x1⅛-inch, No. 284.
3 dozen straight cake pans, 9⅛x1⅛-inch, No. 287.
2 dozen tubed cake pans, 9¾x4-inch, No. 93.
1 dozen turban cake molds, 9⅛x3⅞-inch, No. 108.
1 set aluminum measures, Nos. 194, 195, 192, 193, 194.
3 aluminum measures, ½-pint, No. 180.
2 funnels, Nos. 305, 306.
12 dozen timbale molds.

List of utensils in milk kitchen in children's ward of the Cincinnati General Hospital:

1 Babcock separator.
1 glass funnel.
1 mortar and pestle.
1 Harvard trip scale.
1 rack for distilled water.
12 glass containers for flour and sugar, etc.
3 graduate glasses.
3 glass funnels.
1 Arnold sterilizer.
1 electric hot plate.
1 refrigerator.
1 case for filing formulas.
1 can for cotton.
1 gross 3-oz. infant bottles.
1 gross 6-oz. infant bottles.
1 gross 8-oz. infant bottles.
1 gross 10-oz. infant bottles.
1 scale for weighing baby.
2 Chapin dippers.
2 gross nipples.
1 glass front cupboard.

Aluminum ware—milk kitchen—children's ward:

6 pitchers, 2½-quart capacity, No. 405.
1 tea kettle, 7½-quart capacity, No. 118.
1 aluminum kettle with lid, 2½-quart capacity, No. 707.
1 aluminum kettle, 4½-quart, No. 708.
1 aluminum kettle with lid, 6½-quart, No. 709.
2 pots, 15-quart each, No. 810.
1 double boiler, 17½-quart, No. 922.
2 double boilers, 1-gallon, No. 917.
2 double boilers, 7-quart, No. 918.
2 double boilers, 1-quart, No. 940.
6 measuring cups, No. 180.

List of utensils for kitchen of Nurses' Home, Cincinnati General Hospital:

1 fireless cooker, Duplex, No. 40.
1 retinned plain ladle, No. 100.
1 retinned plain ladle, No. 200.
1 retinned pierced ladle, No. 100.
1 retinned pierced ladle, No. 200.
1 retinned hotel flesh fork, 20-inch, No. 200.
2 hotel cake turners, No. 160.
2 retinned basting spoons, 10-inch.
2 retinned basting spoons, 12-inch.
2 retinned basting spoons, 14-inch.
1 Chinese strainer, No. 75.
1 hotel French strainer, No. 60.
1 hotel French strainer, No. 60, coarse.
1 hotel colander, 9x13-inch, short foot.
4 extra heavy 6X tin dishpans, 10-quart.
2 extra heavy 6X tin dishpans, 14-quart.
4 French fry pans, 24-inch.
4 French fry pans, 28-inch.
4 French fry pans, 32-inch.
2 strapped roast pans, full size of oven.
4 strapped roast pans, half size of oven.
6 bakers' sheets steel, 18x24x1, open one end.
6 deep putting pans, 5-quart.
1 six compartment round spice box with handle.
2 Columbia flour sifters.
1 Bonanza apple corer and parer.
2 tin apple corers.
1 sugar dredge, 4X tin, No. 1.
1 flour dredge, 4X tin, No. 2.
2 tea strainers, No. 2.
1 hotel grater, iron bound, 9x13-inch.
1 Peerless nutmeg grater.
1 Lightning cocoanut shredder.
1 bake house scale with scoop, ¼ oz. to 8 lbs.
1 flat skimmer, No. 12.
1 flat skimmer, No. 13.
1 retinned plain ladle, No. 9.
1 retinned plain ladle, No. 12.
1 retinned pierced ladle, No. 12.
1 Clinton vegetable slicer with grater attachment.
1 Universal meat chopper, No. 3.
2 ice picks.
1 pair ice tongs.
2 retinned egg whips, 15-inch.
2 Surprise egg whips.
2 Dover egg whips, large and small sizes.
1 salad washer, 10-inch.
1 berry washer, 10-inch.
2 hotel pot chains.
2 wire toasters, 10x17-inch, No. 24.
2 wire broilers, 11x14½, No. 23.
1 pure sieve, brass wire, tin frame, 16-inch, with brush.
1 extra strong vegetable press, No. 2.
1 wood chopping bowl, 14-inch.
1 double mincing knife.
2 retinned grocery scoops for flour, No. 2.
2 retinned grocery scoops for sugar, No. 2.
1 retinned thumb scoop for tea, No. 12.
2 maple rolling pins, 3½-inch.
3 glass lemon reamers.
3 garbage cans, No. 8.
1 wooden table, pipe iron legs on casters, same height as range.
1 pantry ladder.
1 hanging wall scale, 2 oz. to 60 lbs.
2 water pails, No. 212, Puritan.
1 hardwood salt box, 1-pint.
2 cutting boards, No. 2.
1 batter kettle, No. 1.
2 agate wash basins, No. 28.
4 egg slicers.
6 match boxes.
2 can openers, sure cut (patent).
2 corkscrews.
2 grapefruit knives.
1 set skewers.
1 set larding needles.
6 Guernsey mixing bowls, No. 5.
1 waffle iron, 6-cake.
1 timbale iron, round.
1 Syllabub churn, 12-inch.
12 hanging soap trays.
1 bread box, No. 4, Fries.
1 cake box, No. 4, Fries.
1 cracker box, 10x5-inch, No. 2, Fries.
1 cheese box, No. 1, Fries.
1 butter quirl.
1 steak tong.
1 marble pastry table, 6 ft. x 30-inch (4-foot marble).
4 cake and pudding sticks, 9, 10, 11, 12-inch each.
1 pine knife box.
1 range scraper.
4 mixing bowls, Guernsey, No. 6.
1 set vegetable cutters, 12 pieces.
3 biscuit cutters, 2-inch diameter.
3 jumble cutters, 2½-inch.
1 pastry jagger.
1 bean slicing machine, No. 3588, 9-blade.
5 palette knives, 6, 8, 10, 12, 14-inch.
6 border molds, oval.
6 savarin molds, rounded, 4-inch.
1 croquette mold, round.
1 confectioner's thermometer.
1 mayonnaise mixer, No. 24, Christy.
1 Chandler ice breaker, No. 2.
6 wood spoons, 13-15-22-inch.
3 butcher knives, 8-10-12-inch.
1 ripping knife, 6-inch.
1 boning knife, 6-inch.
1 beef slicing knife, 12-inch.
4 cook's knives, 6-8-10-12-inch.
1 butcher's steel, 14-inch.
1 heavy carving fork, 7-inch.
6 kitchen forks, long handle.
6 vegetable knives.
1 cleaver, 8-inch.
1 butcher's saw, 24-inch.
2 glass carriers, heavy tin.
6 earthenware bean pots, 1-gallon.
6 10 to 1 quart Gilchrist ice cream dishers for serving vegetables.
1 ice cream can scraper.
1 chopping machine.
2 wooden bowls, 14-inch.
2 dish wagons.
12 retinned table spoons.
12 retinned tea spoons.
1 sanitary meat slicer.
1 Triumph beating machine.

Aluminum ware for Nurses' Home kitchen:

1 colander, 11¼x5 inches, cap. 3¼ quarts.
1 11-quart cap. sponge or egg kettle, No. 867.
1 13-quart cap. sponge or egg kettle, No. 868.
1 14-inch potato frier with wire basket, No. 775 (cruller pan).
2 heavy household fry pans, 11⅛-inch diameter, No. 457.
6 baking pans, 23⅛x13¾x2, No. 246.
2 heavy fry pans, 14-inch diameter, No. 414.
1 heavy fry pan, 8-inch diameter, No. 408.
6 baking pans, 18¾x12¾x2-inch, No. 245.
½ dozen pudding pans, 2-quart capacity, No. 85.
1 dozen pudding pans, 3-quart capacity, No. 73.
½ dozen pudding pans, 1-quart capacity, No. 80.
1 dozen dairy pans, 5-quart capacity, No. 398.
1 dozen mountain cake pans, 9⅛x1½, No. 90.
1 dozen shallow cake pans, 12x8-inch, No. 99.
½ dozen square jelly cake pans, 9⅜x8⅜, No. 96.
3 deep pie plates, 10x7⅝-inch, No. 284.
1 dozen straight cake pans, 8x1¼, No. 286.
½ dozen tubed cake pans, 9¾x8, No. 93.
2 only oval jelly mold, 7⅝x5⅝, No. 110.
12 dozen timbale molds, 2-inch diameter top.
2 dozen griddle cake covers, 6-inch diameter, No. 200.
2 asparagus cookers, 7½-quart capacity, No. 323.
1 set measures, ½-pint to 4-quart (Nos. 190, 191, 192, 193, 194, 195).
6 ½-pint measuring cups, No. 180.
1 set funnels (Nos. 302, 303, 304, 305, 306).
2 tea kettles, 7½-quart capacity, No. 118.
1 dozen brown bread pots, 4¼-inch diameter, No. 111.
1 only soup strainer, 1-quart capacity, No. 912.
1 only soup strainer, 2-quart capacity, No. 914.
½ dozen pint bowls, 1-quart capacity, No. 891.
½ dozen shallow bowls, 1-quart capacity, No. 292.
½ dozen deep bowls, 1-quart capacity, No. 293.
1 only double boiler, 4-quart capacity, No. 917; 1 only 11-quart capacity.
1 only double boiler, 8½-inch capacity, No. 919; 1 only 17½-quart capacity.
1 deep stock pot with spigot, strainer and cover, 60-quart capacity, No. 856.
1 saute pot with loop handle, 8½-quart capacity, No. 472.
1 saute pot with long handle, 5-quart capacity, No. 440.
1 saute pot with long handle, 3½-quart capacity, No. 439.
1 sauce pot, 2½-quart capacity, No. 547.
1 sauce pot, 4½-quart capacity, No. 548.
1 sauce pot, 6½-quart capacity, No. 549.
1 sauce pot, 8½-quart capacity, No. 550.
1 shallow stock pot, 14-quart capacity, No. 712.
1 loop-handled cover for saute pot, 12-inch diameter, No. 592.
1 loop-handled cover for saute pot, 7-inch diameter, No. 587.
1 loop-handled cover for saute pot, 8-inch diameter, No. 588.
1 loop-handled cover for saute pot, 9-inch diameter, No. 589.
1 loop-handled cover for saute pot, 10-inch diameter, No. 590.
1 circular rack for inside of kettle.
1 circular rack.
1 cast oblong griddle, 23⅝x12, No. 389.
3 dozen trays, 15x21-inch, No. 349.
1 dozen trays, 15⅜x11⅛-inch, No. 347.

List of utensils for small candy kitchen and roof of Nurses' Home:

3 tea pots, 1-quart capacity, of brown earthenware.
3 toasters, 10x17 inches, wire.
3 wooden spoons, 8-inch.
3 paring knives.
3 bread knives.
3 butcher knives.
3 spatulas, 6-inch.
3 kitchen forks.
3 small strainers.
3 compartment spice boxes.
3 glass lemon reamers.
3 "Dover" egg beaters.
3 "Daisy" egg whips.
3 garbage pails, "Witt," 1½-gallon capacity.
3 sets of containers, marked cake, bread, flour, salt, tea, coffee, soda.
6 vinegar cruets.
3 pitchers, white enamel, 2-quart capacity.

3 mixing bowls, Guernsey No. 4.
3 confectioners' thermometers.
3 aluminum tea kettles, 5-quart capacity, No. 116.
3 aluminum double boilers, 1-quart capacity, No. 140.
3 aluminum stew pans, 4½-quart capacity, No. 508.
3 aluminum coffee pots, lat. capacity No. 30.
3 aluminum stew pans, 8-10-qt. capacity, No. 505.
6 aluminum trays, 11⅝x9⅝-inch, No. 261.
3 aluminum fry pans, 7-inch diameter, No. 407.
6 aluminum measuring cups, ½-pint capacity, No. 180.
12 aluminum flat plates, 8¾-pint, No. 895.
12 aluminum shallow cake pans, for cooling candy, 12x8 inches, No. 99.

Steel in Specifications

It is becoming a favorite practice in making specifications to specify some particular brand of steel. Some steel company starts an advertising campaign of its products, goes to every manufacturer of kitchen equipment, and offers to put his name in its advertisements provided the equipment manufacturer will state in his literature that he uses this particular brand of steel. The architect drawing the specifications which he often obtains from the manufacturer, names this steel in his specifications. This, of course, gives the advantage to the equipment maker who has the steel in stock, while those manufacturers who habitually use a different brand of equally good quality have to figure on buying a small quantity at higher prices, or to insert in their specifications the name of another brand, which is naturally taken by the uninitiated to be "something different" from that specified and consequently open to suspicion.

If a special brand is mentioned, the words "or equal" should be used with it, thus avoiding this difficulty; and if the gauge is specified one is sure of getting the quality wanted, without favoring any particular equipment or steel manufacturer.

Tables in the Kitchen

Wherever possible steel table tops should be used, and in all cases iron pipe legs and metal undershelves are essential to sanitary conditions.

THE COOK'S TABLE

The cook's table should always be of all-steel construction, and where chopping or cutting is necessary wood cutting boards should be used to protect the knives.

As these cutting boards raise the height of the table above that which cooks are accustomed to, it is advisable to reduce the height of the steel table to 32 inches, instead of the 34 inches usually specified for wooden tables on which the use of a cutting board is not necessary.

A good specification form for a cook's table of steel is:

A table — feet long and — inches wide, the top to be of No. 10 gauge (U. S. standard) steel (or if the table is less than 36 inches wide, of No. 12 steel). The top to be perfectly level, ground and polished, with edges rounded, and to be riveted to a 2x2x¼-inch angle-iron frame with outside face ground and polished to a smooth surface. This top to be mounted on half-inch iron-pipe legs fastened by means of floor flanges and having ball feet. The legs to be cross-braced with angle iron and to have a 14-gauge galvanized iron sectional shelf 10 inches above the floor. (The span between the legs should never exceed 8 feet.) The table to have — drawers, 24x30x8 inches, constructed of 14-gauge galvanized iron, with brass drawer pulls, and hung on polished angle-iron slides. (When drawers less than 24 inches wide are used, 16-gauge iron is heavy enough.)

It is convenient to place a sink about 20x20x12 inches in size in the cook's table, and this sink should not be constructed of material lighter than 14-gauge galvanized iron or 32-ounce copper.

Occasionally a bain marie is placed in the table, and sometimes a steam table is included, but it will be found, in all except some special cases, that it is better to have these constructed as a separate fixture.

CLEAN-DISH TABLES

While it is possible to make these of metal, the risk of breakage is greater and the fact that a clean, white dish will invariably contract marks from a metal table when moved on the metal surface, suggests that the best practice is to have the clean-dish table constructed of well-seasoned hard maple, coated with one or two coats of linseed oil, which makes the table impervious to moisture. The table should be about 1¾ inches thick and with two one-inch shelves above it; the table to be mounted on iron-pipe legs and the shelves on iron-pipe standards.

The clean-dish table need not have as large an area as the scrap table, because the stacked dishes do not occupy as much space as the loosely piled up soiled dishes. It is a common mistake of designers to make them the same size.

FISH TABLE

If a fish table is desired it should not be of wood covered with metal, but of marble, slate or steel, the last being the most practical, economical and sanitary. This table should always have a splash board or curb at least twelve inches high around the back and two ends, and should have a small sink fitted in it.

PASTRY TABLES

These tables should be of ash or poplar, 1¾ inches thick with 4-inch curb at back and two ends; one-half of top should be covered by a flat marble slab one inch thick, and the whole mounted on iron-pipe legs, properly braced, with galvanized sectional undershelf 10 inches from floor. The table should have a metal drawer 24x30x8 inches, with angle-iron slides; the drawer to be subdivided into compartments.

PREPARING OR WORK TABLE

These tables, to attain the best sanitary results, should be constructed under the same specifications as the cook's tables; but if a less expensive type of table is desired the tops can be constructed of 1¾-inch kiln-dried maple, mounted on iron-pipe legs and provided with tool drawers constructed of 14-gauge metal; drawers are not usually specified, but should be, as their absence causes great inconvenience for the reason that there is no place for the storage of knives and other tools.

According to the annual report of the New York State Hospital Commission it now costs the state over six million dollars a year for the maintenance of its insane population, and last year nearly half a million was expended on new buildings for them. The number of insane persons has increased 123 percent in the last twenty-four years, while the population of the state has increased only 65 percent. Nearly 35,000 insane are being cared for in the state institutions and 27 percent of them are aliens.

Club women, physicians and settlement workers in New York City have become interested in a project to provide small hospitals on the roofs of apartment buildings for the class of families from the homes of which wage earning necessities take most or all of the members daily, and for other persons where living conditions are cramped. The plan is to induce landlords to permit the use of the roofs and to erect thereon hospitals of five or six rooms, with bath, kitchen and sun parlor. A nurse would be engaged and the rooms rented for a small sum per week. These hospitals are designed only for cases of ordinary illness, the main purpose being to make it possible for the patient to enjoy fresh air and quiet with some nursing attention. It is understood that the project has the indorsement of the board of health.

AMERICAN HOSPITAL ASSOCIATION

Everybody Urged to Attend the Convention

Fellow Members of the American Hospital Association:

The next meeting of the American Hospital Association will be held at San Francisco, June 22, 23, 24, 25, 1915.

The American Medical Association meets at the same time.

Doubtless there will be the largest number of hospital workers ever assembled.

Can you afford to miss this opportunity of hearing topics of vital interest to institution officials discussed from every angle in the most practical way by the ablest hospital administrators?

The president is preparing a program, which will be one of the most practical ever presented to a hospital association.

Mr. Bacon is again making arrangements for a special train to convey the members from Chicago to the San Francisco convention.

The transactions of the St. Paul convention are about completed. This report contains about 600 pages of the most practical matter pertaining to institutions ever published. Each member will receive a copy at an early date.

H. A. BOYCE, Secretary.

The Second Call to the Land of Sunshine and Flowers

The American Hospital Association will meet at the Hotel Inside Inn, in the City of San Francisco, June 22, 23, 24, 25, 1915.

This is your opportunity to attend the greatest convention of hospital workers in the world. You will derive much benefit by taking part in the discussions of the papers at the meetings of the Association. You will also be privileged to mingle with hospital workers from the north, east, south and west. Difficulties which have been perplexing you for some time may be solved by a few minutes' conversation with some of the hospital superintendents.

For the benefit of the members, a special train will be run from Chicago to San Francisco. The fare will be about $60.00. Better write Mr. Bacon, Superintendent Presbyterian Hospital, Chicago, Ill., for your reservation.

The president is putting forth every effort to make the program this year one of the best ever presented.

Hospital architecture, training school problems, housekeeping and dietetics will be discussed at this convention. In fact every phase of institution work will be fully covered.

In order to take advantage of this great opportunity you must be a member of this mighty organization.

Boards of trustees are choosing their superintendents and superintendents of nurses from among its members.

It will be to your advantage to become a member of the American Hospital Association today. Why not send your name to the undersigned now?

There are over 7,500 hospitals of all classes in the United States and Canada. The membership of the Association is about 1,100. This means that a great majority of hospital superintendents are not connected with this organization.

The Transactions of the St. Paul Convention are completed. A glance at this report shows that a greater part of the discussions took place in the Small Hospitals Section.

One of the special features of this year's meeting will be the non-commercial exhibit. It is to be hoped that every hospital will contribute toward making this exhibit a real success by forwarding any article which they have found useful to Miss Lydia H. Keller, R. N., Chairman, Northfield, Minnesota. Let everybody contribute something today.

Do not forget, if you are not a member, to send your application to the secretary today. The fee for active members is $5.00. The fee for associate members is $2.00. The initiation fee is $5.00. This includes the first year's dues.

The Association needs you today; you may need it tomorrow.

INFORMATION ABOUT THE CONVENTION

For the benefit of the readers of THE MODERN HOSPITAL, many of whom are members of the American Hospital Association, I desire to present certain facts which will be of interest to those who are thinking of attending the convention in San Francisco next June.

ROUTES AND RATES

The delegates to San Francisco in 1915 will have a choice of routes that will give for sightseeing and study a range never before presented in the history of expositions. Any one of the many rail lines leading west may be used. There will also be a route by steamship from Atlantic coast and gulf ports direct to San Francisco through the Panama Canal. In general, the delegate may reach the Exposition City via Los Angeles; via El Paso and Los Angeles, Albuquerque direct or via Los Angeles; or via Spokane, Seattle, Portland, Vancouver, Victoria or Prince Rupert.

The following round-trip rates have been announced:

From Denver and common points to San Francisco and return	$45.00
From Omaha, St. Joseph, Atchison, Kansas City and common points to San Francisco and return	50.00
From St. Louis, Memphis, New Orleans and common points to San Francisco and return	57.50
From Chicago and common points to San Francisco and return	62.50
From Pittsburgh and common points to San Francisco and return	81.20
From Buffalo and common points to San Francisco and return	83.50
From Detroit and common points to San Francisco and return	73.50
From Cincinnati and common points to San Francisco and return	71.10
From Cleveland and common points to San Francisco and return	76.20
From New York and common points to San Francisco and return	94.30
From Philadelphia and common points to San Francisco and return	92.95
From Washington and common points to San Francisco and return	92.30

All tickets are good via any direct line, returning via the same or any other direct line. Tickets from Chicago, St. Louis and similar territory are good via New Orleans, returning via same or any other direct route. All rates apply via Los Angeles. Round-trip tickets going or returning via Canadian or northern lines through Prince Ru-

pert, Victoria, Vancouver, Seattle or Portland; Shasta Route (rail) or steamship between these points and San Francisco, $17.50 higher, except that tickets via Prince Rupert are $27.50 higher, which includes berth and meals on steamer Prince Rupert to Seattle. Usual stop-over privileges will be allowed on both going and return trip.

Tickets will be on sale March 1st to December 1st, 1915, good for ninety days from date of sale, except that final return limit on all tickets sold at above rates will be December 15, 1915.

The sleeping car rates can readily be determined on inquiry at starting points. Two classes of sleeping cars are operated into San Francisco from the east, known as standard and tourist service. The rates in the tourist cars are one-half of the rates in the standard sleepers.

Special excursion rates by both rail and water will be in effect during the whole of the Exposition period from San Francisco points of interest throughout the Pacific coast.

VIA PANAMA CANAL

Rates will be in effect and excursions will be run during the Exposition period, taking the traveler through the canal on going trip and returning by rail, or vice versa, from Atlantic coast and Gulf ports to San Francisco. Steamship service will also be maintained from South American and European ports to San Francisco via the canal. Travelers via this route will be able to make a study of the canal, the completion of which the Panama-Pacific International Exposition celebrates.

HOTEL ACCOMMODATIONS

San Francisco will provide ample hotel accommodations in 1915 and at reasonable rates. A census just completed by the San Francisco Chamber of Commerce shows 2,023 hotels and apartment and rooming houses in the city, an increase of 786, or about 64 percent in three years. Besides the hotel dining rooms and grills, the Chamber of Commerce census shows 767 restaurants and cafes, an increase of 110, or 17 percent during the past year. Of the hotels more than 90 percent are new, with such modern conveniences in every room as the telephone, hot and cold water, steam heat and electric lights. Among the great hotels that rank with the best in New York or London are the new Palace, with 700 rooms; the Fairmont, with 500 rooms; and the St. Francis, with 750 rooms. An additional wing now being added to the St. Francis will provide a total of about 1,000 rooms by 1915.

HOTEL RESERVATIONS FOR 1915

The Exposition management has organized a "Bureau of Information and Public Service," the services of which are rendered free. This bureau will undertake to supply information regarding hotels, apartments, boarding houses, and rooms for individuals, parties and conventions. The San Francisco Hotel Association, representing more than four hundred modern hotels, apartment and lodging houses, containing more than 50,000 rooms, has incorporated and established the San Francisco Hotel Bureau, with a capital of $100,000. The Bureau will make contracts for the members of the Association for hotel and other accommodations which may be desired during the Exposition year, and guarantees that all who may so contract will receive just and fair treatment in strict accordance with their agreement. These accommodations, the most modern of any city in the world, will be contracted upon the basis of from one to three dollars per day per person, European plan, and for any date and any length of time desired. The contracting party will be required to give a satisfactory guarantee that the rooms will be used at the time stated in the contract. Arrangements with these hotels may be made through the Exposition "Bureau of Information and Public Service," or directly with the San Francisco Hotel Bureau, No. 702 Market street, San Francisco.

INSIDE INN

A great Exposition Hotel, to be erected on the grounds, will make a specialty of catering to the congresses and conventions that will meet in San Francisco in 1915. Among the convention conveniences will be halls seating from 100 to 1,000 each. Officers of organizations holding sessions in San Francisco in 1915 may contract with the Inside Inn for accommodations for their members at fixed rates and for agreed dates.

The rates per day will be from $1.00 to $10.00 (European plan), according to accommodations. Parties either of women or men may be accommodated at very reasonable rates in rooms containing several beds. In addition to the charge for rooms, a charge of 50 cents will be made for each adult guest, and 25 cents for each child between the ages of 5 and 12 years, for daily admission to the grounds.

The Inside Inn, being within the Exposition grounds, will be subject to the rules and regulations of the Exposition, and no abuses, overcharges, nor anything offensive to the moral sense or good taste will be permitted.

A folder describing the Inside Inn, which has been selected as headquarters of the American Hospital Association, has been mailed to the members of the Association.

SEEING SAN FRANCISCO

A study of reconstructed San Francisco, with its Golden Gate, its splendid harbor, ocean frontage, wharves and shipping, parks, markets, military reservations, old mission, public buildings, unique Chinatown, historic points and nearby resorts will well repay all visiting the Exposition in 1915. The best way to make a comprehensive study of the city is by "Seeing San Francisco" personally conducted trips by street car, tally-ho or automobile, at cost ranging from 75 cents to $1.00 per person.

The "Seeing San Francisco" cars leave the Ferry Building at 10:00 a. m. and 2:00 p. m. daily, making the complete trip in three hours. A stop will be made at the Cliff House to view the Seal Rocks, the beaches and the Golden Gate. Fare for the round trip, 75 cents.

A two and one-half hours' automobile trip, leaving at 10.00 a. m. and 2:00 p. m., gives one a splendid idea of the city, park and beach. Fare for round trip, $1.00.

A most interesting trip is that through Chinatown, visiting the Joss houses, the Chinese theaters, bazaars, curio stores, restaurants, markets, etc.

NEAR SAN FRANCISCO

With San Francisco as the center, a week or more can be well spent, and at small cost, in visiting the cities of Oakland, Alameda and Berkeley, a twenty-minute ride across the Bay, and such nearby points of interest as Stanford University, the University of California at Berkeley, the Mare Island Navy Yard, Mill Valley, Mount Tamalpais, the Muir Redwoods, Piedmont Springs, etc. The following are a few of the points of interest that can be reached from San Francisco, with the round-trip fare in each case:

University of California, at Berkeley	$0.20
Sausalito, by steamer	.25
Mill Valley	.40
San Rafael	.50
Steamer trip around San Francisco Bay	1.00
Mare Island (the United States Navy Yard), by steamer	1.00

The "Portola Discovery Trip" on the Ocean Shore Railroad, leaving San Francisco at 10:00 a. m. and returning at 5:15 p. m..... 1.00
Palo Alto for Stanford University, Sunday excursion, $1.05; two-day excursion..... 1.30
Redwood Canyon, on the Oakland, Antioch and Eastern Railway. Round trip from San Francisco, week days, $0.80; Saturdays and Sundays..... .55
Trip to the base of Mount Diablo by ferry and electric railway. Round trip from San Francisco, week days, $2.10; Saturdays and Sundays..... 1.40
Mount Tamalpais, over "the crookedest railroad in the world," and where a magnificent view of the Pacific Ocean, of San Francisco Bay, with its surrounding hills and mountains and of twenty-five cities can be had..... 1.90
The Muir Woods, via Mount Tamalpais Railway (a grove of virgin redwoods, some nearly three hundred feet high, and within two hours' ride from San Francisco) 1.90
The Mount Tamalpais and Muir Woods trips can be combined in a day's outing for a round-trip fare of. 2.90

The "Key-Trolley Trip," leaving San Francisco at 10:00 a. m. and 1:00 p. m., returning at 4:50 p. m., gives one sixty-eight miles of sight-seeing, visiting the University of California, the Greek Theater, the cities of Berkeley, Alameda and Oakland, Piedmont Gardens and Springs, and the Ostrich Farm. Fare for the round trip, including guide and admission to the attractions, $1.00.

AN OUTING

"How can we combine, at reasonable cost, an outing on the Pacific coast with seeing the Exposition and with attendance at our 1915 Convention?" is the constant query. After Convention Week and visits to the Exposition, there are dozens of coast and mountain resorts throughout the Pacific coast that can be visited with pleasure and profit. Among the typical regions that will be of special interest are points in the Great Central Valley, the resorts among the redwoods (both north and south of San Francisco), the various groves of big trees, the resorts near Mount Shasta, Lake Tahoe, Yosemite National Park, the Kings and Kern River Canyons, the many coast resorts all the way from Alaska to San Diego, Los Angeles and nearby resorts, and the Great Northwest. The spas of California will be found equal to the best in Europe. An idea of the cost of staying a week in each of these typical areas will be given. Of course the monthly rate would, in all cases, be less.

YOSEMITE NATIONAL PARK

Those reaching San Francisco via the San Joaquin Valley or with return tickets via the San Joaquin Valley lines, can arrange to reach the Yosemite National Park from Merced via the Yosemite Valley Railway, all tickets permitting stop-over privileges at Merced. From Merced the round-trip rate to the park is $18.50. For those not routed via the San Joaquin Valley, the round-trip rate to the Yosemite National Park from San Francisco will be $22.35 for those traveling on day trains, with $2.00 each way added for Pullman for those taking the night train. Camp accommodations in the park can be secured at from $2.50 to $3.00 per day; hotel rates from $3.50 to $5.00 per day. Tents for private camping may be rented at reasonable rates. Trained saddle horses may be hired in the park at from $2.50 to $4.00 per day. Many tourists in the park take the trails on foot, thus eliminating the expense for saddle horses, as well as securing the enjoyment of mountain climbing. Twenty-six miles from the park is the Mariposa Grove of Big Trees. This grove can be reached by stage, the round trip costing $15.00. From El Portal, the terminus of the Yosemite Valley Railway, the Merced Grove of Big Trees may be reached by stage at an expense of not to exceed $7.50.

GRAND CANYON

Those routed via the Santa Fe route will enjoy a week at the Grand Canyon of Arizona. Here travelers may take trail trips, ride in coaches along the rim and camp out below in the canyon's depths. The round-trip rate by rail from Williams on the Santa Fe to the canyon is $7.50. At Bright Angel Camp rooms may be secured at $1.00 per day, with meals at the Harvey Cafe at reasonable rates. The rates at the El Tovar Hotel are from $4.00 per day up. Other points of interest on the line of the Santa Fe are the Cliff Dwellings, the Indian Pueblos, the Petrified Forest and Old Santa Fe.

It will be necessary for members attending the fair to have their reservations at the Inside Inn not later than May 20th. All members of the American Hospital Association representing hospitals are requested to secure, if possible, all models built to scale and photographs, neatly framed, and plans of institutions with which they are connected, and arrange to have them exhibited in their state buildings at the fair. This can be easily arranged for by addressing the State Fair Commissioners in the state in which the hospital is located.

It will be desirable to make arrangements so that these models, plans and photographs can be turned over to some individual as trustee at the end of the fair in order that at some later period they may be used in connection with the establishment of a permanent Hospital Bureau. I would suggest, inasmuch as the fair is here in California, that the University of California Hospital be used as a repository for these plans, etc., until such time as they are required by the Central Hospital Bureau, which will eventually be organized. H. T. SUMMERSGILL.

Philadelphia Presents War Ambulance to Paris

The members of the Emergency Aid Committee in Philadelphia have presented a magnificent Red Cross automobile ambulance to the American Red Cross Hospital in Paris. The vehicle was manufactured by the Autocar Company, near Philadelphia, and is now on its way to Paris. The money with which it was purchased was raised by Mrs. Barclay Warburton. The ambulance is unique in that it contains water tanks, water heating apparatus, drawers and compartments. In fact, it is a traveling hospital, and has room for six wounded men in bunks and eight on chairs.

In order to combat the activities of the anti-vivisectionists in Philadelphia, who have even gone so far as to prosecute scientific experts working in the laboratories of the University of Pennsylvania, there has been formed in that city the Pennsylvania Society for the Protection of Scientific Research. This society will inaugurate an active campaign of publicity and education, and bespeaks the moral and financial support of the whole medical profession. It has established a class of members to be known as contributing members, to include those who contribute ten dollars or more to further the work of the society. The chairman of the committee on membership is Dr. William Pepper, 1811 Spruce street.

The new Millville Hospital at Millville, N. J., has been opened, with Miss Clara M. Collins in charge. The building was erected at a cost of $30,000, one-third of which was donated by Henry A. Dix, head of the firm of Henry A. Dix & Sons, manufacturers, and the rest raised by the town. The new hospital accommodates thirty-two patients. It is built along the most modern lines and the equipment is up to date.

A new institution, known as the Trinity Hospital and Training School, has been opened in Nashville, Tenn. The building occupied is a large residence at Belmont avenue and Division street, formerly the home of Judge Woodward. It has been remodeled and up-to-date equipment has been installed. Dr. R. O. Tucker is president and Dr. Joseph P. Schell secretary of the corporation by which the hospital is to be operated.